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LECTURES ON VEGETABLE CHEMISTRY,

BY

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LECTURE XLVIII.

On Fermentation and its Products.

I BELIEVE we may define *fermentation* as implying a series of changes which certain fluids undergo when submitted to certain agencies and terminating in the formation of an intoxicating liquid, or, in other words, of a vinous or spirituous liquor. Fermentation is carried on in various ways, in order to produce different fluids, such as beer, cider, and wine, and occasionally a peculiar form of fermentation is employed to produce spirituous liquors, and for the distillation of alcohol. It would seem, that in all cases of vegetable fermentation, sugar is the essential ingredient. When sugar is combined with a certain quantity of starch, and dissolved in water, you have a liquid which, under certain circumstances, will undergo fermentation, and it appears that the sugar, and the other substances, re-act upon each other, and the sugar disappears, its elements entering into the formation of alcohol or spirit.

I cannot give you a better view of the general subject of fermentation, than the manner in which it is pursued in our large breweries in the production of beer, where it is carried on upon an enormous scale, and the outline of the process is this:—

A quantity of malt is ground, and of this an infusion is made, technically called the *mash*, which is usually prepared in a large vat, called the *mash-tun*. Now, as I stated to you the other day, in consequence of the large quantity of starch contained in the malt, it is necessary that the water should be let in upon the malt at a proper temperature, that is to say, between 160° and 180°, and thus, by steeping, the *wort* is made. From the relative composition of barley and malt, it is evident that a change has taken place in the composition of the barley, and that the starch which it contained is converted into sugar. Here is a table which shows you the nature of the change effected, when barley is made into malt.

	Barley.	*Malt.*
Gum	5	14
Sugar	4	16
Gluten	3	1
Starch	88	69

You see how much sugar and gum the malt has gained, and how much starch and gluten the barley has lost.

The wort, which is an infusion of malt, contains the soluble matter of the malt, that is to say, it contains a quantity of gum and starch in solution, and that it has sugar, you may learn from its sweet taste. It is a matter of the utmost importance to the process, to ascertain accurately the quantity of soluble matter contained in a given quantity of the water, to determine with accuracy the strength of the wort, and this is done by means of an instrument used for this purpose, called the *saccharometer*, or hydrometer, which, floating in the liquid, gives you its specific gravity. This is the instrument: it is composed of a brass globe, from the upper surface of which a graduated stem arises, which is marked off in 100 parts from the 0, the point to which it sinks in distilled water at 70°. The specific gravity of the wort for ale is about 1.090; in general, however, the brewers allow so many pounds to the barrel, and a very convenient instrument it is for them. The term saccharometer is not altogether correct, as the instrument merely denotes the specific gravity of the liquor, and not the quantity of saccharine matter which it contains. The specific gravity having been determined, the next thing is, that it is boiled with a quantity of hops, amounting, on an average, to above one-twentieth of the weight of the malt used; and they are added, not merely to give the beer an agreeable bitter flavour, but to preserve it from a sub-

sequent fermentation. The wort having been boiled with the hops, it is rapidly drawn out from the boiler by means of a pump, and conveyed into shallow vessels called *coolers*, which are built in the most cool part of the brewery, and then the wort is cooled down to about the temperature of 50°. There are two objects in view in thus rapidly cooling the wort,—the one of which is, the precipitation of a glutinous matter, which would be injurious to it if allowed to remain; and another object is to retain the liquor at the temperature which is most convenient for fermentation It is then drawn off into the *fermenting squares*, where *yeast* is added to it, and where, after a time, intestine motion begins; it hisses, air is extricated, a scum collects upon the surface, a whitish matter is precipitated to the bottom of the vessel, and an immense extrication of carbonic acid gas takes place; at length the evolution of gas ceases; the liquor becomes quiet and clear, losing much of its sweetness, and a certain quantity of alcohol is formed in it. When the fermentation has gone on to a certain extent, and begins to fall, the operation is put a stop to, by running the liquid out into smaller vessels, where a quantity of scum is again deposited, and at length it is conveyed into very large vats, for keeping. It is found, that as the fermentation proceeds, the liquor loses its density, and acquires intoxicating properties.

In regard to *grape juice*, the process is very similar, but there is no occasion to add yeast to it, as it ferments spontaneously at temperatures between 60° and 80°, and the result of the operation is, that the mawkish sugar of the grape becomes changed; it acquires a pungent flavour, and an agreeable odour derived from the presence of alcohol. It has been found, that a small quantity of sugar will contribute to convert a large quantity of a starchy fluid into alcohol, and it is upon this principle that *washes*, as they are called, are prepared by distillers; so that if a small quantity of malted grain be mixed with a large quantity of unmalted, the product of the fermentation of the mixture is alcohol, which is separated by distillation. The active principle in yeast appears to be gluten, and if we do not add yeast to wort and similar compounds, they are apt to run into the acetous fermentation. The result of this fermentation, supposing things to have gone on favourably, is the product, among other things, of a peculiar fluid, to which the term spirit has been given.

If you distil wine in this way you gain an acrid, pungent, highly-intoxicating liquid, well known under the name of *spirits of wine*; but the fact is, that all these fermented liquids owe their intoxicating effect to the presence of alcohol, which is the product of fermentation.

Here is a table, showing you the proportion per cent. of alcohol contained in different fermented liquors; and alcohol, as you are aware, is composed of carbon, oxygen, and hydrogen.

	per cent.
Port wine	25.83
Ordinary port	23.71
Madeira	24.42
Sherry	19.81
Lisbon	18.94
Bucellas	18.49
Cape Madeira	22.94
Vidonia	19.25
Hermitage	17.43
Claret	17.11
Burgundy	16.60
Sauterne	14.22
Hock	14.37
Champagne	13.80
Champagne (sparkling)	12.80
Vin de Grave	13.94
Cider from 5.50 to	9.87
Perry (average)	7.26
Burton ale	8.88
Edinburgh	6.20
Dorchester	5.56
Brown stout	6.80
London porter (average)	4.20
Brandy	53.59
Rum	53.68
Gin	51.60

The figures set down opposite each liquor, exhibit the quantity of alcohol per cent., by measure in each at the temperature of 60°. You see that port, sherry, and Madeira, contain a large quantity of alcohol; that claret, Burgundy, and Sauterne, contain less; and that brandy contains as much as 53 per cent. of alcohol. In a general way, we may say, that the strong wines in common use, contain as much as a fourth per cent. of alcohol.

In the process of distillation, some water is brought over with the alcohol, which must be separated, if you wish to obtain the alcohol pure; hence it follows, that its specific gravity varies with its strength. When alcohol is poured upon the hand, it produces considerable cold, in consequence of its rapid evaporation; and its boiling point naturally varies with its specific gravity, but it boils at about 176°, when its specific gravity is .820. Now the specific gravity of the vapour of alcohol at 60°, is shown in this table; 100 cubic inches weigh 47.712 grains; and, compared to hydrogen, it is as 21.65 to 1.

We come now to a very important point in the chemical history of alcohol, namely, what happens when it is mixed with water. First, then, the temperature of the mixture

is increased considerably; and, in the next place, there is a corresponding diminution in bulk, which may be easily shown, by mixing the two fluids in a long glass tube. Alcohol being of a less specific gravity than water, being only .820, whilst water is 1.000, you can pour the alcohol upon the water without mixing; but if you invert the tube, the fluids will mix, the vessel will become warm, and there will be a considerable diminution in bulk, and, of course, an increase in its specific gravity; so that the specific gravity of a mixture of alcohol and water is not the mean of the two, but considerably above it. The empty space in the tube is the consequence of the admixture, or the mutual penetration, as it is sometimes called, of the two fluids. It will be many hours before this admixture will have acquired its extreme density, so that it is necessary to afford it time, if we wish to arrive at an accurate knowledge of the result of the mixture. This experiment is important, as connected with the specific gravity of different spirituous liquors; and it shows us, I think, why mere mixtures of spirit and water are more pernicious than when alcohol constitutes an essential part of the fermented beverage, as in wine, perry, and so on. Looking then at the fact, that spirit and water, of the same strength as the alcohol in an equal measure of wine, are more intoxicating than the wine, we may say that the alcohol is more united with the essential components of the wine, and therefore does not act so readily upon the nerves of the stomach, as is well known by experience to be the case. Alcohol exists in some liquids in large quantities, forming irritating, intoxicating, fluids, as brandy, rum, and gin; sometimes you have it combined with certain acids, as with wine; and, in some cases, as in beer, porter, and so on, you have it combined with some nutritious matter, as gum, and so on; and although we are accustomed to speak of wine as strengthening, it is not absolutely so; whereas beer and porter are certainly deserving of that title, a certain part of the nutritious matter remaining behind undecomposed.

To determine the *strength* of spiritous liquors, which is a matter of some importance, we must take their mutual penetration into account; and, in examining them, it is necessary to determine their specific gravity; and from that specific gravity, we are led to infer the quantity of alcohol that may be contained in the liquor in question. Now, with regard to the mode of determining the specific gravity of a spirit, this is generally done by an instrument called the hydrometer; and I think that these hydrometers are to be preferred which give you at once the specific gravity of the fluid, without any reference to its being above proof, or below it. If you learn that the specific gravity of a fluid is .930, you know that that is the specific gravity of a mixture of equal weights of alcohol and water; and this will give you a proof spirit, that is, spirit of a specific gravity of .930; the specific gravity of the spirit being .820, and that of water 1.000. There have been published in the Philosophical Transactions, tables made by the late Mr. Gilpin, which are invaluable to persons concerned in experiments of this kind; these tables show, in the first place, the specific gravity of any mixture of spirit and water, the spirit being taken by weight, and the water by weight. They tell you also the quantity of spirit by measure contained in any mixture with water, and the quantity of water by measure, thus showing the diminution in bulk, by the mutual penetration of the fluids. Now, in determining the value of spirits in that way, namely, by their specific gravity, the excise are liable to be deceived, because the imported or manufactured spirit may contain a quantity of sugar, and hence the specific gravity of the fluid would be found greater, and it would be supposed that the spirit was weaker. A better way of determining the strength of spirits, and to prevent the occurrence of this fallacy, is to take a bottle containing a certain quantity of distilled water, and weigh it accurately, we will say that it contains 1000 grains of water, or only 970; you then pour away the water, and weigh the same bulk of spirit; and if you then divide the weight of the spirit by the former weight of water, the product gives you the specific gravity of the spirit. Thus we find that the bottle filled with distilled water weighs 970 grains, and that the weight of the bottle of spirituous liquor, is only 853.6; you divide the 853.6 by 970, which gives you 0.880, the specific gravity of the fluid. So that, in a mixture of 100 parts of spirit and water of that specific gravity, you would have 34 parts by weight of water, and 79.65 per cent. by measure of alcohol; and these have been decided to be correct proportions by actual experiment, and are set down in Mr. Gilpin's tables.

As you see, in the common spirit lamp, alcohol burns with a pale bluish flame, without giving out any smoke, and, although a costly kind of fuel, it is important and valuable to the chemist. During the combustion of alcohol, under a glass tube, we find that there is a quantity of water collected, which far exceeds the quantity of alcohol burned; and whenever you hold a bell glass over a lamp, it becomes immediately coated with moisture, and drops of water fall down. Lavoisier found, by ex-

periment, that the combustion of 100 parts of alcohol produce 136 parts of water.

When alcohol is passed through a red hot tube, it is entirely decomposed, separating into hydrogen, and carbon, and oxygen, its elements; a portion of charcoal is deposited, and carburetted hydrogen gas evolved. The experiment can be easily made, by putting a portion of a tube into the fire, and through the tube some wire should be bent, so as to afford a greater surface, and the gaseous results may be collected; but if alcohol be decomposed with caution, we learn the quantity of carbon, of oxygen, and hydrogen which it contains. Here is a gaseous compound, containing hydrogen, oxygen, carbon, the vapour of water, and other substances; but, if the experiment be performed with due caution, we come to the result, that alcohol is composed of carbon, hydrogen, and oxygen, in such proportions as may be stated to be a compound of two parts, by weight, of olefiant gas, and one of water; and you will remember that olefiant gas is a compound of 1 proportional of carbon and 1 proportional of hydrogen. Therefore, as you see on this table, twice 7 make 14 of olefiant gas, and one proportional of water 9, make 23, as the equivalent number of alcohol; or, in other words, its elements are 2 of carbon, 3 of hydrogen, and 1 of oxygen, making its number 23, as derived from its decomposition, and the one volume of carburetted hydrogen, and one volume of steam, become condensed into one volume, as far, that is, as the ultimate elements are concerned.

The uses of alcohol are exceedingly numerous in the arts and chemistry; its principal consumption is, unfortunately, in the form of gin, and other liquids which are used by the lower orders, patronised by the government in consequence of the large revenue afforded by their sale.

Ether.—When alcohol is mixed with certain acids, and submitted to distillation, a peculiar compound is formed, called *ether*, and these are distinguished by the names of the different acids employed in their formation. We have only time now to mention one, and shall therefore take *sulphuric ether*. The manufacture of this is very simple; it is made by distilling together equal parts, by measure, of alcohol and sulphuric acid; and the distillation may be carried on in a small scale, in a glass retort, and using a vessel, as you see here; but it would be dangerous to make large quantities of it in an apparatus of this kind, and therefore they put the retort in sand, and have recourse to a leaden still for the distillation of the liquid; and they heat it with high pressure steam, so that no fire shall come near the liquor. I believe I said, by mistake, *equal measures* of sulphuric acid and alcohol, but it is, in fact, equal *weights*; the mixture is, a pound of sulphuric acid and a pound of alcohol, and, in mixing these two liquids, it is necessary that you should be cautious, in consequence of the heat that is evolved. When we are manufacturing ether on a large scale, it is convenient to have a dropping apparatus to mix the two fluids, and a person should stir them at the same time, and thus the evolution of heat is prevented. In distilling this mixture, you will find that there will come over, first, a certain quantity of alcohol, a little changed; then a quantity of ether; and then a peculiar compound, to which the name of *oil of wine* has been given; and, lastly, a quantity of sulphurous acid. If you continue to apply the heat, there is a black matter formed, and a good deal of carbon deposited; but you should put a stop to the process before this change takes place. The ether procured at the first distillation is not pure, but a second distillation renders it sufficiently pure for all the common purposes of experiment. It ought to be afterwards washed with a little water, and re-distilled with a little chloride of calcium, the dry muriate of lime.

The specific gravity of ether is 720, in its pure state, and about 730, and from that to 760, as it is found in commerce. It is highly volatile, so that you cannot pour it from one vessel to another, without losing a portion of it; and, during its evaporation, it produces a great degree of cold, so that if you drop a little ether upon the bulb of a thermometer, you will see the fluid gradually sinking in the tube; and there is a pretty experiment of allowing ether to dribble over a tube containing water; the water freezes readily, and this freezing of water by evaporation of ether may be made under the receiver of the air pump. If you introduce a small quantity of ether beneath the receiver, and allow the vessel containing it to float in water. As you exhaust the air, the ether boils, and by continuing to diminish the pressure, the ether evaporates so rapidly as to cause the water immediately surrounding it to freeze. This depends upon the abstraction of the heat from the water, until it being all carried off by the conversion of the ether into vapour, the water freezes. There are some other properties of sulphuric ether to be pointed out; and these, with the changes which the acids and alcohol undergo when mixed together, will be adverted to in the next lecture.

Lecture XLIX.

On the production of Ether; on the acetous fermentation, and the manufacture of Vinegar.

At the conclusion of the last lecture, we were examining what happened when equal weights of alcohol and sulphuric acid

were distilled together; one of the results of that distillation was *sulphuric ether*, and I mentioned some of its general properties; its low specific gravity, its volatility, its great inflammability, and so forth. In addition to the properties mentioned, we may observe, that it is the solvent of certain bodies, of certain vegetable bodies, as the resins and oils; it dissolves sulphur and phosphorus, but does not dissolve the fixed alkalies, although it combines with ammonia. It dissolves the oxides of gold and platinum, and this solution of gold was called, by the old chemists, *aurum potabile*.

Now, the ether which we have procured by the distillation of sulphuric acid and alcohol, may be purified by a second distillation with bodies that contain water; ether being soluble in water to a certain extent, one part of ether requiring ten of water for its solution, and you will observe, that you are sometimes directed to purify ether by washing it to abstract the alcohol; but whenever you do that, you must recollect that you give the ether about one-tenth of water, and therefore it is necessary to have recourse to some process to get rid of the water, and this may be done by lime, by caustic, potash, and chloride of calcium, substances which readily abstract the water, but which the ether does not dissolve. With alcohol, it combines and forms the *spiritus ætheris sulphurici* of the Pharmacopœia, 100 cubic inches of which weigh 78.36 grains, and hence, when we are using ether, we should be very careful not to bring a candle near it, as its vapour is very inflammable. You may easily show the inflammability of ether, by introducing a small portion of it into a bladder containing common air; you will find that a kind of inflammable gas is formed; and if there were a sufficient quantity of air present, a detonating compound would be produced.

When ether is subjected to the process of decomposition before pointed out, we arrive at a knowledge of its ultimate composition; and it is worth our while to compare it with alcohol, in order to have an idea of the nature of the process which has been here going on, referring to the distillation of the alcohol and acid. We find that ether, compared to alcohol, is composed of four proportionals of olefiant gas and one of water, or, if we put these into numbers, of 28 olefiant gas and 9 of water; here, then, you have one volume of steam, or the vapour of water, combined with two volumes of carburetted hydrogen, or 9 parts of water, 4 times 7, making 28 of olefiant gas; and you will remark, that these three volumes are condensed into one, which will satisfactorily account for its little specific gravity. Now, here we have found, in converting alcohol into ether, that there is an abstraction of a quantity of water, or, to speak more correctly, of the elements of water, because, if you take away half of the water of the alcohol, you convert it into ether; so that, it would seem, that all that the sulphuric acid has done in this distillation, is to abstract half of the elements of water that the alcohol contains. In this experiment, the sulphuric acid itself undergoes a curious change, and it is found to have entered into combination with a certain portion of the elements of the alcohol.

Ether combines with carbon and hydrogen, and you have, produced with these elements, a certain compound to which the name of *sulpho-vinous acid* has been given. A peculiar fluid is obtained by mixing ether with its bulk of sulphuric acid, and distilling it, and this has long been known under the name of *oil of wine*; it is composed of two proportionals of sulphuric acid, eight of carbon, and eight of hydrogen; and, when oil of wine is heated, its nature becomes evident. In the sulpho-vinous acid, you have two proportionals of sulphuric acid combined with four of carbon, and four of hydrogen; or, in other words, you have abstracted one-half of the carburetted hydrogen of the oil of wine. This acid enters into combination with certain bodies, and forms sulpho-vinates; for example, the *sulpho-vinate of baryta* is composed of two proportionals of sulphur, four of carbon, four of hydrogen, and one of baryta; and the whole forms a triple saline compound, composed of sulphuric acid, carbon, hydrogen, and baryta. These experiments are very interesting, as associated with the statement made to you by Mr. Faraday, namely, that he had discovered a similarly neutralising power with naphthaline and sulphuric acid, which he called *sulpho-naphthalic acid*, composed of two proportionals of sulphuric acid, twenty of carbon, and eight of hydrogen. Then, again, the *sulpho-naphthalite of baryta* is composed of the same elements and one proportional of baryta. These are a very curious and interesting set of bodies, and the prosecution of their chemical history will, no doubt, lead us to some new views on this interesting subject. In the alcohol there is an excess of carburetted hydrogen, and you convert the alcohol into ether by abstracting one-half of the elements of water which the alcohol contains. I should mention to you, that when ether is kept for a long time it undergoes a change, and more especially if it be exposed to the light of the sun, and a small portion of air is formed in it.

When you mix together alcohol and nitric acid, and more especially nitrous acid, there is, unless you are very careful, an intense and sudden action, attended with great evolution of heat, so that it becomes neces-

sary to mix them together in small quantities and with great care. Now, when you consider what the elements here used are, namely, nitrogen, oxygen, hydrogen, and carbon, it is manifest that you may have a great variety of secondary compounds produced, and some of them are very remarkable. In the first place, in regard to *nitric ether*; this is also very volatile; it has a penetrating fragrant odour, and it soon decomposes, and, combined with spirits of wine, it is well known to you under the name of *spirit of nitric ether*. If, during this action of the nitric acid on the alcohol, there should be present the oxide of silver or mercury, a compound is produced called fulminating silver, or fulminating mercury. The process by which it is procured is simple: the metal is dissolved in the acid, and, during this effervescence, a powder is precipitated, which is the powder in question; but, in making it, you must be careful to use only small quantities of the materials, as it will detonate with great violence, even in its moist state. The fulminating silver is the most violent of the two, and it will explode with the slightest friction. In exploding a portion of this substance, you must be careful that there is no more near it, as the mere vibration of the air will often explode it. Now, then, we have obtained these compounds by acting the nitric solutions of the two metals by alcohol; but what is their nature? I believe that, until lately, the general opinion was, that they were oxalates, containing, according to Thenard's calculation, a great deal of oxide of silver in them. Some recent experiments of Guy-Lussac, and Leubeck have given another view of the subject, and I think that they contain cyanogen. Now, I formerly mentioned to you, that cyanogen combined with oxygen to form cyanic acid, and it would seem that this cyanic acid enters into combination with the oxides of the metals mentioned, and thus constitutes the fulminating compounds described. Cyanogen, you know, is a compound of two proportionals of carbon and twelve of nitrogen, and this cyanogen, when combined with half its volume of oxygen, gives cyanic acid, represented by the number 34; and one proportion of this acid combines with one of the oxide of silver, or mercury, and forms this fulminating powder.

The other ethers we know very little about. When *chlorine* is passed through alcohol, a liquid is obtained, called *muriatic ether*, but what its composition is, or the exact nature of the change which takes place, we are ignorant of; and another difficulty, common to the correct examination of all the ethers, is, that they are remarkably prone to change.

Acetous fermentation.—This brings us to the subject of *vinegar*, or acetic acid, which we have left thus distinct from the other vegetable acids, because it is, generally speaking, the product of a distinct fermentation, called the acetous fermentation. You very well know, that by keeping wine, or beer, out of the contact of air, they may be preserved a long time without undergoing any change; but, by exposure to the air, under a due temperature, they will soon become sour; a fermentation goes on, and the liquid, originally vinous, is converted into an acid.

Vinegar is made, in this country, chiefly from *malt*; a wort is obtained, as for the manufacture of beer, and this wort is converted into vinegar; but it is manifest that, besides the vinegar, the fluid must contain other bodies usually present in the malt, such as starch, gum, and gluten. Vinegar is, therefore, a very impure acetous acid, and is, in the common way, mixed with other acids diluted with water. If you distil this vinegar, you have an acetic acid and water, and a small quantity of alcohol formed, usually containing, also, a minute portion of vegetable matter. When chemists began to ascertain that the vegetable acids might be obtained in a concentrated form, they applied this knowledge to the production of vinegar, and with great success. One of the oldest methods of obtaining a strong vinegar was to freeze it; the water frozen, the vinegar was obtained much stronger than before; but this was a very wasteful practice, because the acetous acid itself freezes without much difficulty. Then, the next procedure resorted to, was the decomposition of the acetates, and this is the plan now resorted to in order to obtain vinegar in its pure form. If you put some acetate of lead into a retort, and pour upon it sulphuric acid, and carefully distil it, there will presently come off from it a quantity of a highly volatile and intensely acid vapour, which may be condensed by the usual process; but, even obtained in this way, the acid is not perfectly pure. Here is a specimen of distilled vinegar; you see it is a colourless liquid; it is very sour, highly pungent, and its specific gravity is 1,080; it is very volatile and excoriating, and it congeals at a temperature of 40°. Here you see it in its congealed state, constituting what is called *glacial acetic acid*. Its equivalent number is somewhat between 48 and 50, but we will take it as the same as the carbonate of lime, and call it 50.

Now, either by the fermentation of malt liquor, or by the acetous fermentation of wine, you obtain vinegar contaminated with various substances, and such is the vinegar used in the general way for the table. Now this leads me to speak of a me-

thod of obtaining vinegar, largely practised, and which is a very curious and important chemical operation. It was discovered long ago by Glauber, and described in his works, which you will find to contain much interesting chemical information, that vinegar might be obtained from wood, and it has been lately procured in considerable quantities from this source. In the distillation of wood, in the process of making charcoal for the manufacture of gunpowder, a large quantity of gaseous and empyreumatic matter are given out, and this gaseous matter is found to be formed principally of acetous acid; but, unfortunately for the manufacturer, there is a strong affinity between the acid and this matter, so that he is at some trouble to separate them. The method of obtaining pure vinegar from this acid, is to saturate the vinegar of wood with slaked lime; the other liquids are poured off, or evaporated, and we then obtain a *pyrolignate of lime*, commonly combined with some empyreumatic oil, and having a strong empyreumatic odour. Then the next step in the operation for obtaining vinegar from this product, consists in decomposing the pyrolignate of lime by sulphate of soda; a double decomposition takes place, and you have an acetate of soda and a sulphate of lime formed; the acetate of soda is a crystallisable salt, and by dissolving and recrystallising it two or three times, you obtain it quite pure; you then place the acetate of soda in a retort, and pour sulphuric acid upon it, by which the acetic acid is set free, and a sulphate of soda is formed, which does for the future preparation of the acid in the way already mentioned. A pure acetic acid is thus obtained, which you may reduce to any strength you please, by mixing it with water; but as people do not generally like colourless vinegar, the manufacturers are in the habit of colouring it with a little burnt sugar; and in this way an important branch of manufacture is prosecuted. Vinegar, when diluted with water, is used for a great variety of purposes; but, in its concentrated state, it is very acrid, and blisters the skin, and might produce great irritation.

The acetates are all of them soluble in water, and some of them are principally confined to medical purposes. The *acetate of ammonia* is obtained by saturating distilled vinegar with carbonate of ammonia, and this fluid was formerly known under the name of *Mindererus' spirit*, because it was first exhibited by Mindererus; it is readily made, but the acetate of ammonia is crystallisable with difficulty. The acetate of potash is chiefly manufactured for pharmaceutical purposes, and is called the *diuretic salt*, a salt which is generally obtained in flaky masses; it is very deliquescent, containing a large quantity of the water of crystallisation. The *acetate of soda* has an agreeable taste, but its principal importance is as a sourer of acetic acid in the manufactory to which I have adverted. The *acetate of lime* is chiefly important, as being one of the products in the operation for making pure acetic acid. The *acetate of iron* is an article of importance to the calico printer, as a mordant for black dyes; but it is a salt difficultly crystallisable. The acetate of *zinc* is employed occasionally in medicine. The acetate of *copper*, of which there are two kinds met with in commerce, one a pulverulent substance, generally a great mass of impurities, from being made by exposing copper plates to the action of vinegar, produced by the fermentation of the refuse of grape stalks, grape skins, and so on, is an article of some importance in commerce, being known under the name of verdigris. What is sold, however, as verdigris, is nothing more than a mixture of whitening and sulphate of copper; you should, therefore, always use the crystallised acetate. The *acetate of lead* is used in large quantities by the calico printer as a mordant. Now as all these salts are of great use in the arts, and are manufactured on a large scale, you may imagine how very importantly the manufacture of acetic acid from wood bears upon these, and instead of being, as formerly, obliged to have recourse to France for our supplies, we now manufacture them here in abundance with the acid obtained from wood. The acetate of lead in its dry state, has the number 162 for its equivalent, but in its crystallisable state it contains three proportionals of water, three times 9 being 27; we therefore have to add the 27 to the 162, and then it is represented by 189. When acetate of lead is dissolved in water, and boiled upon oxide of lead, it takes up a portion of the acid, you then get what is called a *subacetate of lead*, which is curious in many respects; it is easily decomposable by exposure to air, is not crystallisable, and its solution takes up carbonic acid from the air, and becomes converted into a carbonate of lead, which is insoluble. The subacetate of lead, obtained by boiling litharge in vinegar, used to be called *Goulard's extract of lead*, and it is the *liquor plumbi subacetatis* of the Pharmacopœia. The other acetates are of no importance.

There are some curious facts connected with the acetates generally, namely, that under decomposition, during particular circumstances, there is a substance generated similar, in some respects, to naphthaline, or ether, and was used formerly burned in lamps.

This, then, Gentlemen, concludes the chemical history of the vegetable substances; the three next Lectures will be occupied with the consideration of animal chemistry, and we shall finish the course with an outline of the science of geology.

THE MEDICAL PROFESSION.

If there be one subject towards which your attention has been more particularly directed—if there be one more especially interesting to your numerous readers—or if there be one respecting which mankind in general must entertain a more or less lively concern; that one subject, probably, is the present state of the "medical profession," respecting which it is my present purpose to make a few remarks, grounded upon an acquaintance with no inconsiderable number of its members, and an attentive experience of many years, chiefly spent in professional society, and the acquirement of professional knowledge. These remarks, however, are not directed (as those hitherto written upon the same subject have too often been) towards demonstrating the impropriety or impolicy of certain medical statutes—the superiority of this or that particular school—the comparative usefulness of this or that denomination of professional men. The first of these it is not in the power of private individuals to modify in the slightest degree, much less to repeal; its consideration, therefore, on my part, would be but lost labour; and as to the two latter, I not merely regard them, as unfortunately too prolific subjects for invidious and interested comparisons, but consider them as altogether below the attention of men who have enjoyed a liberal education, who are practising a liberal profession, and are supposed to be living in a liberal age. That in the darker centuries professional men were looked up to with a respect proportionate with the description and number of high-sounding and space-occupying titles attached to their names, we can readily understand; nor does it surprise us that little attention was paid to other criteria of merit. In those times education was confined altogether to the first grade of society, (and even there, comparatively speaking, was but of a limited character,) so that the great bulk of the profession being in a lamentable state of ignorance, these titles formed the chief, nay, only distinction between the learned and the illiterate; but those ages are passed, and with them their darkness; and the consequence is, that the very same nominal distinctions, which were then highly regarded, are now "as empty sound." But one title at the present day is sought after, is respected; the letters F.R.C.P., M.D., or M.R.C.S, may, in conjunction with a dozen others, be attached to our names, or may be useful in distinguishing one individual from another, yet they form but an useless show, unless accompanied (and it is well known they are far from being necessarily so) by the only one which deserves, how obtains, and will ever continue to merit respect, viz. talent; whether that talent has been acquired on the banks of the Cam, the Isis, the Forth, or even at less favoured places.

Before proceeding further, it may not be superfluous to remark, that the object of this communication is, to direct the attention of its readers to the *opinions* and *modes* of practice current amongst the disciples of the Apollonic art at the present day, and I trust it is written in strict accordance with that liberal spirit which is favourable to every species of free discussion, opposed to every narrow-minded axiom, to every species of unprofessional conduct, and which (whether viewed in relation to its effects upon an individual, or society at large) is indispensable.

The medical profession may be said to consist of three great classes, viz. of what may be denominated, 1st. Practical men; 2dly. Theorists; 3dly. Theoropractitioners. The first class, or those whom (in compliance with the usage of vulgar parlance) I have termed "practical men," are generally individuals advanced in life, whose medical education has been in the first instance, i. e. during youth, exceedingly defective, or (supposing them to have consumed the "midnight oil" during the spring-time of existence), are men, who, having experienced the incorrectness of some particular and favourite hypothesis cherished in their more studious days—having remarked the facility with which the greater number of diseases may be combated and eventually subdued, by treating individual symptoms as they arise—and having lost that "vis insita" for inquiry, which the plurality of mankind during their earlier years possess, treat their patients, more by the rule of *precedent*, than according to any method suggested by *reasoning* upon the phenomena which the disease under view may present; and in all complaints of very frequent occurrence, practitioners of this description are as markedly successful as they are at fault, when the disease is of an uncommon or an anomalous character. If asked their opinion of medicine as a science, they will tell you, and tell you truly, that its most important rule is that inculcating observation; but, alas, in what a limited sense do they employ the word! That, in proportion as your remedies are few and simple, your success in combating disease will be great. That, industrious application towardsthe acquirement of medical and scientific lore, will materially injure, instead of improve your powers of judgment, and your mode of practice, and that time devoted to obtaining a familiarity with morbid anatomy, is little better than idly

spent. I have said they are men generally advanced in life, they have consequently acquired what they specially pride themselves upon, and for which are, indeed, altogether looked up to by the crowd viz. *experience*; but this class of practitioners do not seem at all sensible of the material difference that may and does exist amongst experienced men. If they will not consider it too much labour to open and carefully peruse the pages of Zimmerman, they will find that drawing from the book of Nature, he describes two distinct species of experience, viz. the *true* and the *false*, and will be compelled to admit the possibility of a man practising medicine for half a century, and yet having no more *real experience*, paradoxical as it may appear, at the expiration of that time, than what he might have boasted of at its commencement. If this position be well founded, (and it will be difficult to invalidate it,) of what value is mere age as a criterion of experience? On the other hand, how truly invaluable is age, when the *true* species of experience has only been limited by time! Ours is a profession, which cannot be too assiduously cultivated, and, perhaps, the greatest pleasure its followers derive, is attributable to the great variety and never-failing springs of knowledge which it presents; there is little fear of these springs becoming dry, for to few with more truth than to the followers of medicine can we apply the old saying—

"Multi multa sciunt, sed nemo omnia."

Before leaving this division of my subject, allow me to recommend to these "practical men" the following observation of Dr. A. T. Thomson (addressed to the Council of the London University,) "I am of opinion, that the moment a practitioner ceases to be a *student*, he is no longer worthy of the confidence of the public; and that the life of a physician can only be truly useful and honourable when it is unremittingly employed in study, in determining the truth of theoretical opinions by observation, and proving the value of practical suggestions by the test of experience." But whilst few will be found in the above class bold enough to call in question Dr. Thomson's most just opinion, I entertain very faint hopes of their acting up to its dictates, and my reason for doing so will be found in the celebrated observation of Bacon—"Cogitamus secundum naturam, loquimur secundum precepta, *sed agimus secundum consuetudinem.*"

The second class is formed of men diametrically opposed in disposition and practice to those just described; they are more active minded (particularly if the craniometer, *measuring mind*, be applied over the organs of ideality); they are (although, generally speaking, but young men) possessed of more extensive attainments, but they are infinitely worse practitioners, and more dangerous at the bed side; the former recognising a disease when presented before them, and treating it according to the established rules of their art; whilst the latter, from entertaining *undefined* or *exclusive* opinions, mistake, but too often, the real nature of the complaint, or (when it chance to be of too palpable a character to be mistaken) treat it *experimentally*, according to some author they have been reading, favourite teacher they have studied under, or original view entertained by themselves. "Theorists," who possess very extensive general acquirements, are the men whose practice is so *undefined*, their minds are too liberal to entertain exclusive doctrines, and to pursue a corresponding practice, but forgetful of the trite, yet excellent adage, "in medio tutissimus ibis," they are also too fickle to be consistent; their practice is of one character to day, of another to-morrow; this *order* of theorists forms as large a proportion of the profession at the established temples of Apollo, as they constitute a small proportion in less favoured places; they have knowledge enough, but they want the discriminative tact of separating what is useful from what is merely chaff, and, without this, their information is never practically useful; for it has been truly remarked, that "reading, without observation, is little better than dreaming." The *exclusive order* of this class, are a much more numerous and less talented body of men; their mental powers being of a very limited character, (or, to speak phrenologically, their *reflective* organs, being little developed) it follows, as a natural consequence, that those views which they have acquired (and there is little deficiency of *perceptive* talent in such individuals) will occupy their whole attention, to the exclusion of liberal views and impartial investigation; the result is, we have bigots in medicine as well as in religion, and an additional verification of Pope's declaration, that "a little knowledge is a dangerous thing." But to instance a few examples of this order:—An exclusive disciple of Clutterbuck, treats all febrile affections as originating in one common source, the *brain*; and, if he has had the good fortune to attend Armstrong, declares *congestion* to be the cause; an exclusive disciple of Corvisart sees, in every case where the nervous system is a little disordered, and producing a corresponding irregularity in the sanguineous functions, *organic disease of the heart*; an exclusive pupil of Laennec, flourishes the stethoscope over the chest of a chlorotic female, suffering from disordered uterine function, hearkening to, and searching for, the cause of a cough which

he may well not find in the only part which he has suspected, viz., the chest. Who has not heard, "ad nauseam," *an exclusive* advocate the Abernethian doctrines of disordered liver, and its corrector, blue pill? Who has not had his digestion, after an aldermanic repast, interrupted by hearing the oft repeated name of Philipp, coupled, as it is, with the Protean forms of gastric disorder? And, lastly, (for we might proceed almost ad infinitum,) who has not seen, within the range of his medical acquaintance, *an exclusive*, who believes, with Broussais, that nine-tenths of the ills to which "poor human flesh is heir," solely originate in a diseased condition of the mucous lining of the alimentary canal!! Of such men, Martial may have been thinking when he quaintly says,

"Ride si sapis,"

for ridicule may affect and restore such beings to reason—argument only confirms their folly. That Clutterbuck, Armstrong, Laennec, Corvisart, Philipp, and Broussais are men of first rate ability, no one, who had read their several works, would for a moment question; that their pathological views, as applied to a great number of cases, are correct, it would be as foolish to deny as it is ridiculous in the men I have been last describing applying them to all and every variety of disease without exception.

Upon the third, last, and least numerous, division of the medical profession, viz., the theoropractitioners, little need be said; possessed of the practical application of the first, in combination with the mental endowments attributable to the more talented order of the second class, they constitute a body of men whose services are invaluable to mankind, whether we regard them as successfully checking the ravages of disease at the bedside, or contributing still further to the hallowed cause of humanity, by improving that science, the objects of which are to allay suffering, restore health, and prolong existence. In accordance with the invaluable method of inductive procedure laid down by the immortal Bacon, (the application of which to medicine has hitherto been generally much neglected, although its incalculable advantages are more than sufficiently evidenced in every science to which it has been applied,) the theoropractitioner rests not satisfied with an accurate knowledge of the human frame, both as regards its structure, the functions it has to perform, and the laws by which it is regulated; with knowing the "modus operandi," of the various medicinal agents which modern industry has discovered, or past ages approved; with being able to enumerate and recognise the symptoms which accompany, and indeed characterise, disorders; with ascertaining and removing the *effects* which disease may have produced; but, with an indefatigable zeal which no difficulties can despirit, and a cultivated acumen which no obscurity can withstand, he carefully traces the relations between *cause* and *effect*; he distinguishes between the apparently real, and hidden true source of mischief; by attending to the latter more particularly, his object is at once attained; he then inquires whether the concomitant and beguiling features of the complaint were accidental, or referrible to the disorder they accompanied. Should the disease prove fatal, he weighs carefully the value of preceding indications, in reference to the morbid state, which is found to have coexisted with them—in a word, he is a true pathologist.

If the trite, but most excellent advice, "initio morborum occurrite," contain, as I presume it to do, the most important maxim ever delivered to our profession, how invaluable, nay, how indispensable, is that prescient and diagnostic tact, which nothing but the united experience of the bed side and the closet can confer, and which no one but the indefatigable pathologist can possess. It has been said, and the saying has been encouraged by the indolent, that medicine never can attain principles as definite as those which regulate what are termed the "exact sciences;" but this, in a great measure, although not altogether, I am much inclined to controvert, believing that the observation,

"Fortuna tanquam Proteus, si perseveres
ad formam redit,"

would equally apply to medicine as to fortune.

I might enlarge this sketch by detailing the industry with which the theoropractitioner pursues every individual branch of science, or observation, which is calculated to enlarge his views of medicine, to improve his mode of practice, but that were a tedious, as it is an unnecessary, task. If I have, in some faint degree, succeeded in pointing out to the profession the two extreme roads into which so many of its members wander, the path to be pursued requires no further description; in the avoidance of the two first, we naturally and necessarily pursue the last.

JOHN ALEXANDER, M.D.

Manchester, May, 1828.

TO THE SURGICAL AND MEDICAL PUPILS ATTENDING THE BOROUGH SCHOOLS.

My respected Fellow Students,—Of all the questions calculated to engage the attention, and to call forth the active endeavours of pupils thoroughly to investigate, perhaps that of the irregularities exhibited by *heads of hospitals*, in conducting the surgical and medical departments, will be found the most important, although, as far as my knowledge has gone, it is one respecting which the students have offered but comparatively little public opinion, and to which they have presented still less *actual opposition*. To what can this strange circumstance be attributable? Can we ascribe it to direct indolence of disposition? It is to be feared, indeed, we might assign to a *certain few* a far more contemptible reason, for we have actually seen those who have affixed their names to *a certificate*, in *immediate opposition to motives of conscience*, regarding an individual, in whose behalf they could only contend, that he was "*a very free, good-natured sort of a fellow.*" But although it is not easy to account for the inactivity of students *as a body* in these momentous matters, so immediately affecting their own interest, we may with more certainty state the inevitable evils which are the result of it. In that invaluable publication, "The Lancet," I observed, a week or two since, the letter of a country surgeon, (he could not have studied in London, at least for many years, or he would have known better,) who, in speaking of infirmaries, alluded to the exactness and propriety observed in the metropolitan infirmaries and hospitals, as examples worthy to be copied!!! Now, the case of this man is precisely that of the *governors of hospitals*, and of the *public generally*: in the dark as to the real state of affairs, they are led to believe that in these places, which are, strictly speaking, their property, the individuals whom they have at great cost placed there as their servants, act in every respect in perfect accordance with the principles they professed, and with the smooth promises they made previous to admission into office: thus is fostered that spirit of "glory in shame," so obvious in this class of *worthies*, and the exercise of which has given rise to so much cause for discontent and regret. But what is the fact? Have not these institutions, which were intended to exist as the imperishable monuments and abodes of that pure *charity* and *benevolence* that once dwelt in the bosoms of the immortal founders. Have not they been robbed of their property, and their place supplied by the hand of plunder? And have not the very virtues, which it was designed should be made the foundation of a beautiful superstructure of knowledge that might enlighten surrounding nations, have not these been made the foundation of a superstructure of *monopoly*, which will ever throw a shadow of reproach upon those who have helped to raise it.

There may, and, in all probability, will be *a select few*, (to whom I have before adverted,) who, inclined by false notions of interest to follow blindfold at the skirts of hospital surgeon, still think the objects of these charities have not been perverted; but I would beg such to reflect upon the precious hours they have passed under the porticos, vainly waiting a surgeon's or physician's arrival, or for a post-mortem examination, or, may be, to gain admission to the museum: how many difficulties they have experienced in striving to collect a few facts of a case—in short, *how many obstructions* to the mere perusal of a "Case Book" in the wards, and I would then ask if each cannot, as regards himself, make this serious appeal.

"Have I not suffer'd things never to be forgiven?"

These are not exaggerations. Only a few days since, whilst in the act of transcribing a few observations from Dr. Elliotson's book, in a certain ward of St. Thomas's, I was unexpectedly interrupted by a rude, snuffy, and untutored old woman, (tutored enough *in this matter* doubtless,) to the effect of stating her belief that I was not a pupil, that I had no business there, and that she had, on a former occasion, "*got a tremendous rowing*, for having *permitted* a gentleman *to take notes out of the Doctor's book*." Now, had this happened to an individual who had no professional pursuit there, it would perchance have been more tolerable; but having occurred to one, who had by an *exorbitant sum of money purchased a right to that book*, as valid as that of the physicians themselves, it can only engender the most profound disgust towards the instigators of such conduct, and create a blush in us at the pitiable spirit pervading them, and so manifest in their every transaction. It will hardly be credited that a Borough pupil is *prevented* from subscribing to *the library* of St. Thomas's, unless he have *previously entered to the hospital*; or, what is the same thing, it is not deemed worth while *to pick the pockets of a student*, for the sake of *one paltry guinea*.

It has been stated, that much of the inconstancy of attendance on the part of the surgeons and physicians has originated from the carelessness of the pupils, and the deficiency of clinical instruction has been adduced as an example; but I boldly deny that, at least while I have known these schools, this has, in any degree

been the case; and whoever has taken the trouble to make observation, will confirm me in charging its origin to the neglect of lecturers to attend at *the appointed hour*, by which the class have been kept shivering, loitering, and grumbling in the court-yard, like so many out-patients; and the consequence of course was, that most of the members came to the resolution not to attend again, while the remainder determined upon observing later hours; thus, when by chance the lecturer has arrived to deliver the surgical clinique at the *proper hour*, he has had the *wished for pleasing* opportunity afforded him, of stalking out of the theatre again, and making his boast, that the *non-attendance of pupils* will prevent him from giving clinical lectures in future. And the same remark might with equal propriety be made, as to the visits round the wards. It is well known to pupils that we are told, upon *paying the fees*, these visits are made at half past twelve o'clock precisely; but I appeal to these same pupils, if they have not *often* been delayed from *that period* till about a *quarter to two o'clock*, when possibly the "*long looked for*" may have "*come at last*," and have graciously presented *a choice* to us, of either *losing the anatomical lecture*, or being *deprived* of what is termed *walking*, though it might be more true to call it *running* the hospitals. And what, in the end, has been, and will be the effect of this? Why, that most of the students, after a sacrifice of so much money, have hardly thought of visiting the hospitals at all, and that themselves and the public have suffered, and still must suffer. From these truths, may we not come to the painful conclusion, that pupils have immense sums of money extorted from them, for contracts which are never fulfilled; that they have no opportunity for improvement, but, on the contrary, every thing to impede them in the progress of professional knowledge.

And who that contemplates this for a moment, but will be ready to exclaim, it is time to escape from such "dire oppression." Is not our position in society, in after life, entirely dependent upon our success in practice, and this likewise upon the extent of our knowledge, which last is proportionate to our advantages now. Let it pass that *we have* borne, with silent lips, *insult* and *wrong*. Let it pass that we have seen ourselves *deprived of our privileges, one by one*, and like Sheridan, when he saw his house in flames, never attempted to wrest an atom of property from destruction, or to quench the devouring element. We have now proved the existence of evils, and of evils which are fraught with pernicious effects to us and to the world, and can we bear this sacrifice of our future comfort, and of human life, with apparent approval?

Though we may not possibly have the benefit of a removal of these evils extended to us, while we are within the Borough walls, yet, in the first place, we cannot but feel that pleasure dear to us, which springs from a consciousness of having been instrumental in the good of the fellow-creatures who surround us, and especially of those who are nearly allied to us by professional avocation, and who, in all likelihood, may tread the steps we have trodden at these hospitals; and, in the second place, it becomes an *imperative duty* upon us to adopt the language of the Catholics of the present day, and declare, "that if they will not emancipate us, we will emancipate ourselves."

The question then arises, as to what course might be most beneficially pursued to further our intentions. Past events have fully testified that nothing can be done on our part, without the united exertions of many: perchance a puny arm may now and then have been raised in defence of right, but it has only served those before whom it was bared, as a laughing stock, or they have passed it by "as the idle wind which they regard not." I would therefore venture to propose, that students of the Borough do convene meetings every week, or *as often as may be deemed necessary*, for the express purpose of taking into consideration the *various* and *serious evils* under which they are labouring, and the most effectual and speedy means of remedying the same.

In the mean time allow me to remain,

My respected fellow-students,

Your attached friend,

J. W.

On the safety and necessity of Amputation in spreading Mortification. By GEORGE BUSHE, M.D., of the Royal College of Surgeons in Ireland, and Assistant Surgeon to the Forces.

THE catalogue of surgical writers can boast of no better names than Pott and Sharp; to them we are indebted for many sterling improvements in surgical science; but yet these celebrated men committed errors, which have been partly rectified by succeeding authors. When we read their sentiments on the operation of amputation for mortification, we cannot but regret that they did not adopt a more impartial line of research; which, when aided by the vast experience they must have enjoyed, would have induced them to alter what they wished might be received as an axiom, viz., that

amputation should never be had recourse to, in mortification, until the deadening process had ceased, and a line of separation had been established. To substantiate this maxim it was urged, that no matter what care might be taken to distinguish between the diseased and healthy parts, the operator very likely would be deceived, by finding that, though the integuments appeared to be, and indeed were perfectly sound, the deeper-seated parts, as the cellular tissue, and muscles surrounding the bone, were in a state of gangrene; and that if even the divided parts were healthy, the same morbid affection would, in all probability, attack the stump, and soon prove fatal; finally, that the shock of the operation, when added to the debility produced by the disease, would seriously endanger the patient's life. These opinions, derived from such high authority, naturally impressed the surgeons of England with a determination only to amputate for mortification, after a line of separation had been established;* and even in the present day the same doctrine is publicly inculcated, by some of the first teachers in the empire; and it is merely from a conviction of the unstable foundation, upon which this doctrine has been erected, that I am induced to write this short paper; which has for its object to prove the necessity there exists for, and the safety that may follow amputation, in cases of spreading traumatic gangrene.

B. Larrey, in his "Memoirs de Chirurgie Militaire," tell us, that at Toulon, in 1796, he amputated in a case of spreading traumatic gangrene, with the best success; and that in 1801, at the siege of Alexandria, in Egypt, he again repeated this practice with the same success; and that from this period many of the surgeons of the first rank, in the French army, pursued his example; and, from their experience, we must conclude, that so far from being a hazardous, it was generally a safe, line of practice. But the Baron is not the only person who has recommended this derivation from the maxim of Pott and Sharp, for Miher, who wrote in 1799, distinctly says, that mortification succeeding to gun-shot wounds, is the only case that requires *immediate* amputation; and Mr. Lawrence and A. C. Hutchison, both relate successful cases where amputation was performed for traumatic mortification, before a line of separation had been established.

I have now twice observed amputation terminate favourably, when performed for spreading traumatic gangrene; one case was operated on by the late Professor Todd; and the other was a patient of my own. The subject of Mr. Todd's operation was a wretched woman of the town, about 25 years of age, and greatly emaciated by dissipation; she was admitted into the Richmond Hospital, Dublin, in the summer of 1823, on account of a compound dislocation of the left ankle-joint, attended with extensive laceration of the ligaments; to which, in the space of eighteen hours, succeeded spreading mortification, accompanied with general sinking of the vital powers. On the beginning of the third day, amputation was performed below the knee; and a complete recovery followed.

The other case, that which fell more immediately under my own care, and altogether bore a disheartening aspect, I shall, by way of concluding this paper, detail more at length.

Sweetman, æt. 28, of sallow complexion, and delicate frame, by trade a labourer, on the 12th, Dec. 1827, whilst engaged in attending masons on a scaffold, 47 feet high, (near Chatham) fell to the ground; by which he sustained the following injuries, viz. dislocation of the right femur upwards and backwards; dislocation of the knee backwards, and compound luxation of the ankle-joint of the same member. He was immediately removed to the parish hospital, where he was soon visited by surgeons Hope and Bryant; who reduced the luxation of the knee, closed the wound of the ankle, and placed the limb in the semiflexed position, having previously made many fruitless attempts to reduce the luxation of the hip. After reaction had taken place, blood was freely abstracted from the arm, and subsequently the usual treatment was steadily pursued. From the date of the accident, until the 15th, he went on favourably; but at this period he complained of excruciating pain; the limb became tumid, and a black spot appeared in the neighbourhood of the wound. Bark and opium were administered in large quantities, but they did not appear to have any beneficial effect, as the deadening process extended, accompanied with dreadful suffering; and on the evening of the 18th, (when I first saw him) the medical gentlemen above mentioned, and Messrs. Robertson and Tribe, were present. When we found that the limb was quite livid, even above the knee, and covered with large vesicles containing a dark-coloured fluid, attended with great tension and tumefaction of the thigh, and an emphysematous condi-

* No person can more admire men, who have improved science and literature, than I do; but I could wish that others would agree with me, in not even receiving, as correct, without a strict inquiry, matter from the most renowned in our profession; for I do think, that many unpretending individuals may detect serious errors in the writings of the most notorious members of the faculty.

tion of its cellular tissue, and also that of the lower part of the abdomen. His face was pallid; skin rather cold; fore-head and breast covered with a clammy perspiration; tongue tremulous; and his pulse weak, soft and quick. Seeing that death would certainly take place in a few hours, as the mortification was extending rapidly towards the trunk, and the vital powers quickly sinking, nothing appeared to forbid the only alternative, (amputation) but that the shock of the operation, when added to the functional depression under which he laboured, might prove suddenly fatal.—However, as his friends were urgent for the operation, I immediately removed the limb below the trochanters; during the operation the loss of blood was very inconsiderable, and no further depression of the vis vitæ ensued. He had a large opiate, and warm beef-tea *ad libitum*. On the following day, when I visited him, I was informed that he had a good night, having slept seven hours; his skin was natural; pulse more full, firm, and less quick. The stump was free from unnatural tension, or other untoward appearances. It would be useless to follow this case further, as it presented nothing remarkable; the stump healed rapidly, and he was soon discharged the Hospital, well.

Chatham, March 1, 1828.

A Case where the Right Eye, and a large Encysted Tumour were successfully removed. By GEORGE BUSHE, M.D., &c.

JOHN ALBUTT, ætat. seven years, in November, 1826, was, without any known cause, affected with protrusion of the right eye, which gradually increased. On the 3d of April, 1827, I was consulted by Mr. Tribe, (who previously had charge of the boy,) as to the practicability of an operation for his relief, there being considerable exophthalmia, with total loss of vision, and a great tendency to torpor. On examination, I found that a resisting tumour extended across the orbit, above the globe, the former having the effect of bearing the latter downwards and forwards. Some of my medical friends supposed, from the situation of the tumour, the rapidity of its growth, and accompanying cerebral symptoms, that it was a fungus from the right anterior lobe of the brain; but as the boy had no cerebral symptoms when the tumour first appeared, I supposed it more likely that the tumour, by causing absorption of the roof of the orbit, and pressing on the brain, produced the stupor, &c.; and, after mature consideration, I determined to attempt the removal of the tumour and eye, if necessary, as the only means of preventing fatal consequences. But to this the parents objected; however, on the 16th of the month, I was called to see the patient, and found that the tumour had enlarged to such an extent, as to produce coma, still further projection of the eye, and partial paralysis of the left side of the face and upper extremity, with a dilated and immoveable condition of the pupil of the left eye: the parents having finally consented to the operation, I proceeded as follows:—

The boy being placed on a table near the light of a window, I divided the external canthus to the edge of the orbit, and then elevated the upper lid, by which a tumour, elastic and irregular, was exposed, extending across the orbit, and forwards to the supra orbital ridge. With the handle of a scalpel I detached it from its connexion with the bone, to the extent of half an inch; but found that it so completely embraced the globe, and was so closely lodged in the orbit, that it would be impossible to remove the former without sacrificing the latter, I therefore drew the contents of the orbit downwards and forwards, by inserting a curved needle, armed with a strong ligature, through the edge of the tumour and globe of the eye; I now cautiously proceeded to detach the tumour at its posterior part, but before I had proceeded far, I was not a little annoyed to find, that what I had anticipated was correct, viz. that the tumour pressed on the anterior lobe of the brain, the posterior and superior part of the roof of the orbit being absorbed; however, I cautiously pursued the separation of parts to the foramen opticum, and finally divided the optic nerve and recti muscles with a curved scissors. Slight hæmorrhage followed the operation, but was easily restrained by a portion of sponge. In ten days the wound had nearly healed, and the little patient was walking about without any inconvenience.

Chatham, April, 1827.

ON DISEASES OF THE BONES.*

External Necrosis.

Dr. M'DOWELL remarks, that this affection of the bone is often the result of external violence:—

"A clot of blood, remaining a length of time, produces necrosis of a scale of the lamellæ on which it lay, which excites the surrounding structure to the formation of pus, as a medium of separation between the living and the dead bone; or, the clot of itself producing irritation foreign to the nature of the part, may excite formation of pus. This fluid accumulating, either bursts through the periosteum and integuments and is discharged, or, encountering a firm

* American Medical Recorder.

resistance from the periosteum, (which is often the case,) attains the necessary space for its increased bulk, by extending the separation between the bone and its periosteum, sometimes entirely denuding it, and thus effecting its complete necrosis. This is what I would term *external* necrosis, and unless the pus is evacuated and allowed a free vent, it becomes the cause of the extension of the disease from bone to bone, until sometimes many bones are affected."

The treatment recommended is, to make a free incision through the integuments at the most depending part of the swelling, and another at the upper part. 2dly. To excite the exterior of the bone, and the interior of the periosteum, by stimulating washes; by passing setons when the parts will admit, from a superior to an inferior opening along the bone; and, 3dly, By compression with a roller, or with the laced stocking. In confirmation of the beneficial effects of this plan, the following case is related:—

"Tom, a *negro* boy, the *property** of Mrs. Rowland, ætat. 10, pumping from the top of a fence, fell and struck the tibia against a rail that lay on the ground. A small tumour arose, which at the time was but little regarded; about fourteen days afterwards, general swelling of the leg commenced, attended with severe pain; the swelling soon became most where the original injury was inflicted, at which point his attending physician, Dr. S. O. Caruthers, made a small opening with a lancet, from which there was a free discharge of pus. But the swelling below still extended towards the foot, and he daily grew worse. Hectic fever supervened, with colliquative sweats and diarrhœa: these symptoms were combated with the ordinary remedies; nevertheless, his danger became so imminent, that I was called in to amputate the leg, and visited him with that view on the 22d November, 1825. On enlarging the small issue already made, between the tibia and tibialis anticus, to a size that admitted the introduction of the finger, both the tibia and fibula were found denuded as far as they could be examined, and appeared dead, exhibiting the white graveyard appearance. In conference with Dr. C., on representing the success of my restorative endeavours in cases I conceived to have been of similar character, we concluded to delay amputation and make a trial of the kind. With such views, a large knitting-needle (having no probe of sufficient length,) was introduced at the opening above named, and passed down along the naked tibia, passing between the two bones, and was cut out posterior to them, between the malleolus externus and the tendo-achillis; believing this to be the most depending situation to which pus had arrived. A stout skein of thread was passed, from one opening to the other, and the roller was applied from the toes to the knee. I never visited him afterwards, but was informed by Dr. C. that the fever and constitutional symptoms, after this operation, quickly yielded to the same remedies they had baffled before, and that his recovery was rapid and complete."

When the external part of a diseased bone is discovered to be black only in parts, Dr. M'Dowell is of opinion, that efforts should be made to "reanimate" so much of the bone as is not decidedly carious, even though the whole bone be denuded, and he recommends that "*the carious portions should be forcibly detached, without wasting any time, awaiting the dubious process of exfoliation.*"

Case.—"Matilda, a mulatto woman, the *property* of General J. Preston, aged 25, was visited 26th December, 1823,—she had a deep-seated swelling, and pain below the middle posterior part of the thigh, which had been of several weeks' duration. Discutient liniments, blisters, mercurial plasters, and poultices were applied without effect. On the 2d January, 1824, a free incision was made, and about a pint of pus discharged from a situation much deeper than external examination had led me to expect; the bone was denuded, as far as I could examine it up and down, to the extent of eight or nine inches, the opening was sustained by tents, and a roller was applied from the toes to the hip; at each dressing, tincture of myrrh was freely injected. By the 1st of March, amendment was such, that only a small denudation of bone remained, not exceeding an inch; on the 2d of April, a carious plate was forcibly detached; eight or ten days afterwards, on examination, the bone could not be reached with the probe, and on the 18th April, she was discharged cured."

The following Case is subsequently adduced, by way of contrast, to show the tedious process of Nature in effecting Exfoliation:—

"Bill, a negro man, the *property* of Mr. S. Kennedy, suffered a compound fracture of the femur when a boy, from the falling of a tree upon him. Re-union of the bone was tedious; and after it was completed, the opening through the integuments continued, and became fistulous. On the 9th of June, 1821, I was called to examine him (eight years after he had received the fracture). The issue was situated about six inches below the trochanter major, through which the probe readily reached rough naked bone; the muscles of the thigh and leg of the diseased limb were flaccid and

* And is this your boasted "land of liberty?" Oh! Jonathan, Jonathan.

shrivelled, and the limb was but little more than half the size of the other; his general health was such, that he could endure no fatigue, and caused him to pass most of his time in a recumbent posture.

"By the advice, and with the co-operation of Drs. Patterson and Madison, such an incision was made, as admitted free examination of the bone. A caries was discovered about an inch in diameter, rough and black; it was surrounded, and tightly embraced by the edges of the sound bone, which seemed disposed to close over it, resembling the appearance sometimes remarked in a tree, the recent growths of which are in the act of closing over a canker it has sustained from partial decortication, or from the removal of a chip. The black scale, more than a quarter of an inch in thickness, and still very firm, was broken up from its place, and removed; the sinus healed in a few weeks; the boy regained his general health, and the diseased limb, in the course of a few months, recovered the healthful appearance, and the full size of its fellow."

Internal Necrosis.

Necrosis of the internal structure, like external necrosis, and most other diseases of bone, Dr. M'Dowell remarks, is frequently of constitutional origin, and, of course, requires that attention should first be paid to the constitutional taint. But he states that particular attention is required to the local management, a point which he thinks has always been too much neglected. The treatment recommended is, as in the case of external necrosis, the removal of the carious bone.

The first case related, is that of a boy in whom an abscess slowly formed about an inch and a half below the knee; the abscess burst, and a sinus eventually formed, from which several portions of carious bone were discharged. The patient's health having become much affected, and it being clearly ascertained that the tibia was extensively diseased, an operation was performed for the removal of the carious part. A trephine, and the saw called Hey's, were used to remove the lamellæ, and the "carious cancelli" were removed with a "*gouge* and *scraper*." The caries extended so near the joint, that *a discharge of synovial fluid followed the separation of the diseased bone, and continued to flow sometime afterwards*! Inflammation was suppressed by bloodletting; and the leg, as Dr. M'Dowell affirms, at the expiration of six months, had recovered its full size and strength.

A second case, in which a similar line of practice was adopted with success, is detailed. The patient, a boy nine years of age, had most extensive disease of the tibia, and "*about two-thirds of this bone was removed.*" In less than six months, this patient was able to walk "without stick or crutch," and the present deformity of the leg, it is said, consists "in but little else than the scar."

PHRENOLOGY.

To the Editor of THE LANCET.

SIR,—A single fact is worth all the theories in the world, and the stubbornness with which truth resists fiction is pretty strongly exemplified in the examination of the female skull, by Dr. Epps. It is one of the most complete death-blows this monstrous tom-foolery has received, and must point out the absurd doctrine phrenology *pretends* to inculcate! We will, for an instant, suppose it to be accurate in its examinations: what a pleasant introduction to a friend on the onset, if both are inoculated with this prodigious qualification? Each individual would be taking every opportunity of feeling the bumps and lumps on the cranium of the other, and society (already seriously stupid,) would be worse than intolerable by the natural shyness such plain elevations of bony matter must demonstrate. Some of the organs would be too friendly! The Spurzheim doctrine is ingenious, but wild; evidently pointing out its German origin, and plainly indicating a brain imbrued too deeply with the horrors and wonders of the Hartz-mountain.

Hear this, ye phrenologists!! The woman was hanged for murdering her own infant, and yet the love of offspring was *huge!*

DER FREISCHUTZ.

Twickenham, May 16, 1825.

CHOREA.

To the Editor of THE LANCET.

SIR,—Observing, in the Number of your Journal of the 24th of May, the minutes of a case of chorea successfully treated with the carbonate of iron, I beg leave to subjoin an account of a case occurring in my own practice, with a similar result. I was consulted, on the 6th of July 1827, in the case of S. D., a girl of fifteen; she had constant motion of the limbs and of the whole body, which had been gradually increasing for the space of one month, and had resisted the action of purgatives. I commenced, on the 12th, with ½ dozen doses twice a day; she was perfectly recovered by the 30th of the same, when she desisted from taking the medicine.

Your obedient humble servant,

WILLIAM WELLS, M.R.C.S.

Totness, Devon, June 17, 1828.

THE LANCET.

London, Saturday, July 5, 1828.

It would be an insult to the understanding of the medical profession to suppose, that the intellectual and literary character of any considerable portion of the great body of English surgeons was represented by two such publications as the Weekly Excrescence put forth by the editor of the Yellow Journal, or the Fasciculi still published by the quondam editor of a Quarterly Medical Review. In fact, no such imputation can justly be cast upon medical practitioners, for the circulation of these publications is as limited as the literary capacity of their conductors. We have seldom felt it necessary to advert seriously to the lucubrations of either of the Aberdeen graduates who preside over these monuments, or rather graves, of medical intelligence, and when we noticed, a few weeks ago, the plan propounded by one of them for the revival of a system of "Hole and Corner" surgery in our public Hospitals, it was rather in compliance with the wishes of some of our Correspondents, who were of opinion that the proposition merited castigation, than from any conviction of our own, that the *nisiseries* of the writer required animadversion and exposure. It is ludicrous, however, to observe the extravagant satisfaction with which the Editor of the Excrescence has caught at this exception to the general course of forbearance, from which, he says, our "better feelings" have induced us to deviate. He recals to our recollection the period at which we intimated, that we would not retard "by any notice" the dissolution of certain contemptible imitations of this Journal, and infers with delight, either that he was not one of the objects of our "original decree, or that his own merits have entitled him to some relaxation of it. If we did not recognise an old acquaintance in the author of the plan for reviving a system of "Hole and Corner" surgery, we should have a difficulty in picturing to ourselves the manner of man, who could feel gratification at the notice we took of that proposition. He is evidently delighted at that notice, and considers derision a grateful substitute for neglect; but, while he is unable to conceal the satisfaction he derives from having entitled himself even to the ridicule of The Lancet, we think he is a little ungrateful in reproaching us with inconsistency. "The editor of The Lancet," says he, "finding that his design of leaving us to sink, without retarding our untimely dissolution 'by any notice,' is not likely to prove altogether successful, has, with his usual consistency, adopted an opposite course." Now, even supposing the charge of inconsistency to be well-founded, the writer should have remembered that he was indebted to our change of purpose for a distinction, which he is desirous of impressing upon his readers as an evidence of his increased importance; to say nothing of the awkward basis on which the charge is founded, namely, the consciousness of the writer that he is one of the contemptible imitators of The Lancet to whom we alluded. But the truth is, that the editor of the Weekly Excrescence is only an old friend with an attempt at a new face, and it argues no inconsistency on the part of this Journal, to show up from time to time a set of features with which the profession has been long familiar. Who is there, for instance, at all conversant with the medical literature of this country during the last four or five years, who does not immediately recognise "the old hack of a journalist," as Mr. Samuel Cooper styled him in the following *descriptio personæ*, which seems to have inspired our contemporary with a comfortable conviction of his own importance?

"There is a class of persons to whose understanding Nature has been sufficiently bountiful to enable them, like pigs, to smell the quarter from which the wind blows, and

to make a reluctant sacrifice of individual prejudice, to what they have sagacity enough to perceive to be the general sentiment of the community. There is also a class, whose intellect is of more contracted dimensions, and from whose stock of ignorance no experience, or opportunities of observation, subtract one iota of imbecility. To this latter class belongs the individual who has just broached his plan for the revival of a system of "Hole and Corner" surgery in our public hospitals. Time flows in vain for a person of his intellectual *calibre*; and experience, which enlarges the perceptions of a healthy mind, serves only to confirm his prejudices, and to render his obtuseness incurable."—THE LANCET, p. 309.

There is another ground upon which we have a right to tax the Editor of the Excrescence, not merely with ingratitude, but with a failing which he shares with the manufacturer of the "Fasciculi," and which is, of all others, the meanest, and the least excusable in a public writer, to wit, the want of literary honesty. If there be any difference, in point of morality, between the verbal uttering of a falsehood, and the wilful violation of truth, through the instrumentality of the press, the latter is the more flagrant offence, because it supposes greater deliberation in the commission, and a more persevering purpose to deceive. An instance of this species of mendacity occurs, in the remarks made by the Editor of the Excrescence on our exposure of his "Hole and Corner" proposition. He quotes one of his own profound passages, in which he states "that the public are singularly ignorant of medical matters, and, of course, singularly liable to be duped by any crafty knave, who has no scruples in arrogating superiority of his own knowledge," and then intimates that we misrepresented this passage, and more especially omitted the remarks about "a crafty knave," from a consciousness that this cutting piece of satire applied to ourselves. We were afraid, in short, according to this writer, of fairly citing a passage, which, though not the best possible example of the purity of his English, was a formidable specimen of the severity of his sarcasm. The truth of this grave imputation on our courage, may be ascertained by a reference to page 338 of this Journal, in which the whole passage, which the Editor of the Excrescence accuses us of suppressing, may be found transferred, word for word, to our pages. But we can scarcely expect, at this temperature, that any of our readers will take the trouble to convince themselves of the bad faith of the Editor of the Excrescence, and we will, therefore, re-quote the precious passage which that sagacious person evidently supposes to be one of no ordinary poignancy and pith.

"That surely cannot be deemed a public matter, which the public cannot understand; and of medical and surgical matters the public are singularly and pre-eminently ignorant, and, of course, are singularly and pre-eminently liable to be deluded—to be duped by any crafty knave, who has no scruples in arrogating superiority of his own knowledge, and calumniating the skill of others."

The "crafty knave," as the "satirical rogue" now confesses, was meant to apply to the Editor of this Journal, not as the construction of the sentence would imply, in his character of a medical practitioner, but in the capacity, wherein he has supplied the profession and the public with reports of hospital cases. The writer further states that, instead of a faithful detail of cases, the reports published in this Journal have represented "one set of men as always doing precisely what was right, and another set as always committing the most palpable and disgraceful blunders; the former being invariably those who supported THE LANCET, the latter those who condemned it.' Now, if the Editor of the Excrescence really believes that THE LANCET has craftily acquired the confidence of the profession, and a circulation far more extensive than was ever yet obtained by any scientific Journal in this country, by a system of fraud and deception such as he has here described, he is in a condition which calls

rather for our compassion than our contempt, and we marvel not at his attempt to ingraft his own morbid perceptions on the minds of his readers. But if he entertains no such belief—if, on the contrary, he knows that out of many thousand hospital cases reported in this Journal, there are not half a dozen of which the accuracy has ever been called in question, and but one which has been made the subject of an action at law, in which action we have put a plea on the record, which will bring in issue the TRUTH of the report; if he knows this, what shall we say of his honesty? or, to use an argument which is more likely to find access to his feelings, what shall we say of the policy which would seek to palm so foul a misrepresentation on the public? But the writer, in the impotence of his desire to fix an imputation on THE LANCET, destroys his own statement; for what is the essential character of that craft, to which he attributes the successful falsification of reports? Craft is power to deceive, and this power supposes a superior knowledge of the adaptation of means to an end. Now, supposing the end which a medical journalist has chiefly in view, to be no higher than that which is found by experience to stimulate the majority of mankind, namely, the promotion of his own interest, how can the Editor of the Excrescence reconcile the craft which he imputes to us, with the selection of the means most inevitably calculated to destroy our own interest? Let us survey for a moment the steps of our enlightened contemporary's arguments, and, for the sake of clearness, put them into the form of a syllogism.

The public are singularly ignorant of medical subjects, and therefore singularly liable to be duped by a crafty knave.

But a crafty knave has, for the last five years, duped them by a systematic falsification of hospital cases.

Argal, reasoneth our medical Dogberry, it is high time that all crafty knaves, detected in falsifying cases, should be forcibly ejected from our public hospitals. If we inquire who are to be the judges whether a crafty knave has been detected, the answer is obvious. The hospital surgeons, whose reputation may have suffered from the publication of an unsuccessful case. If a doubt be suggested, whether an unpalatable report has been wilfully falsified, seeing that it is obviously against the interest of a medical journalist to misrepresent the facts of a case, it is replied, that the interest of the journalist has been sacrificed to the gratification of private malice. Private malice! Pooh! pooh! pooh! This twaddle may pass current among the Bats, but it cannot impose on the understanding of men, whether in or out of the profession, who reflect on the motives of human actions, and who, in balancing opposite probabilities, will naturally conclude, that hospital surgeons are more likely to have occasionally exhibited ignorance and want of skill, than that a medical journalist should have been malicious, without any assignable motive for malice, and systematically regardless of his own interest, in a matter where it is not pretended that he was not perfectly capable of appreciating the means best calculated to promote it.

The truth is, that an incompetent functionary will always regard a Journalist, who records his errors, as an enemy. Unskilful surgeons shrink as naturally from public criticism as bad authors, and are fully as much given to vituperate the tribunal which condemns them. However impartially the Journalist may discharge his duty, if the *facts* he records lead to inconvenient conclusions, the Hospital Surgeon denounces him as a crafty knave, like the culprit, who, after an unfavourable summing up to the Jury, exclaimed, "Have a care, Gentlemen, of that rogue upon the bench; the villain has a design upon my life!"

Delineations of the Origin and Progress of various changes of Structure which occur in Man, and some of the Inferior Animals; being the continuation of works already published on this subject. By JOHN BARON, M.D., F.R.S.. &c. Longman and Co.

In his two preceding volumes, the author laboured to establish an identity between hydatid and tubercle; that hydatid may be produced under circumstances unfavourable to the general health; that every hydatid is convertible into tubercle—and that every tubercle has for its avant-courier an hydatid. This, we apprehend, to have been the Doctor's "end and aim;" but, on account of the confused and very obscure nature of his description, we may possibly have been led into a mistake of his real meaning, as seems to have been the case with Laennec, and some others.

In the introduction to the 2d volume, page 10, of this medico-political, or politico-medical production, which some twenty years since would not have been unworthy of Downing Street, the author favours us with a quotation from the first book of the Novum Organon, as if the inductive mode of reasoning was to be pursued by him in the inquiry on which he had set out. At p. xiv, we have another from the same author's 2d book on the advancement of learning; and then he breaks out against French physicians and French philosophers in a spirit of unparalleled unchristian-like invective. At p. xvi, he charges them with having "perverted many passages of the work De Argumentis Scientarium, with a misapprehension of the spirit of its author's writings, and a daring perversion of his precepts;" while on the destruction of national character and understanding here aimed at, he would erect his own ridiculous hypothesis, which has no more real foundation than "the baseless fabric of a vision." Such a manner of proceeding is described by Bacon himself as anticipating Nature, and he condemns it as being rash, hasty, and unphilosophical. The character of mind displayed in this publication, seems to depend, in a great degree, on physical structure; for as we run, we may remark in the conformation of the Doctor's head, a wonderful development of a certain organ, which is apt in many instances to entrap the assent of a person's own mind, and which is too apt to be delighted with its own conjectures, and to allow the imagination to be struck and filled with its own plausible subtleties.

In respect to the abuse heaped upon French physicians and French philosophers before alluded to, we would have the Doctor to know that Laennec, of whom he speaks so contemptuously, was a learned physician, a sound philosopher, and an amiable man. So are most of those of whom Dr. Baron speaks in a manner altogether so very unjustifiably. The accomplished physicians and philosophers of the French metropolis are never found associated with artful hypocrites, who hold out to the crazy enthusiasts of the present day, that a certain faith, accompanied by long faces, long prayers, and long graces, will stand in the place of all duties towards God and man; that election is thus secured, and sins as glaring as scarlet made as white as snow. Daubenton, while treating especially of our physical nature, intreats us to distinguish the empire of God from the dominion of man; that God, the Creator of all beings, is alone master of the whole universe. Another of those much traduced persons, in language well calculated "to feelingly persuade us what we are," says, in treating of the nature of created beings, "Toute la puissance de la terre, toute la force du genre humain se tait en la présence du maitre éternel des mondes." Do these passages savour of infidelity, or of atheism? No, they are of more real value than a thousand methodist sermons, and all the evangelical tracts with which this country is inundated.

At page 90 of the first volume, Dr. Baron

tells us, that "a very great variety of important changes of structure take place from hydatids," and then goes into a very brief account of their structure, of which he seems to be wholly ignorant. He informs us, that one of their distinguishing characters is, that when recently taken from the body and punctured, they suddenly contract, and send forth their contents with considerable force, so as to project them to a height of many feet. We were about to exclaim, prodigious!! our wonder, however, ceased when it came to our recollection, that on a certain occasion, in puncturing a haggis with a knife having a somewhat blunt point, we observed the downward pressure to occasion the more fluid part to be thrown into the face of the inexperienced operator, and that on spooning out the savoury contents, the interior surface was found to have fallen into convoluted rugæ, as in the case of the doctor's hydatids. This contractile power, nevertheless, did not seem to warrant the conclusion, "that it possessed at the time a certain share of vitality, independent of the animal in which it had existed."

In the next paragraph the Doctor says, "Sometimes a cluster of hydatids receive their nutrition from a small pellicle, or stalk, like a bunch of grapes from a branch of the tree. At other times they are imbedded in the body of the viscera, or are spread over the surface of membranes, and diffused through the cellular substance and muscular textures, and that such are the appearances of the commonest species of hydatids in their natural state."

This passage betrays the most glaring ignorance on the part of the author in respect to the subject of which he treats; he has jumbled together nearly all the genera of hydatids known to naturalits, under what he terms "*the commonest species.*" What will our continental brethren say to this production of an English F. R. S? Goëtz, Rudolphi, Lamark, Bose, Artidi, Cloquet, and ye others, who have devoted years to the consideration of this subject, hide your diminished heads!

The Doctor's experiment on the poor little family in the hutch, is a very unfortunate one. It has been long known that animals thus placed in respect to food and habitation, will suffer in the way he has described; but the Doctor is not aware that the hydatid thus produced, is that which is called by Goëtz the pisiform, which has never been found in the human subject, although it has been figured by him as having been met with in rabbits. The cystiurcus of Rudolphi seems to be the only hydatid of which the author has the least idea, which is described, if we understand him aright, as the oftenest met with in the parenchymatous substance of the lungs, although it has never been discovered by any other person in that situation, having only been found in membranous and cellular parts.

We were at one time engaged, during two whole years, in assisting a professor of medicine, who was also physician to one of the London hospitals, in making a most rigorous examination into the nature of pulmonary tubercles. We not only inspected the lungs of such persons as had died of phthisis, but also of those who had been cut off by other diseases, when winter cough was known to have been present during one or more preceding years, with a view of ascertaining the state of the lungs, in the incipient stage of the disease. The changes of structure which were then observed, have lately been confirmed by Andral, who has inspected more bodies in one year, than the author under our review ever examined, or will have an opportunity of examining, during the whole course of his lifetime. This investigation was, moreover, carried on in the presence of many scores of inquiring and unprejudiced observers. There was redness of the part, sometimes accompanied by a brownish, or reddish, extravasated fluid, evidently the effect of in-

creased action in the part. The next morbid change consists in the formation of a very small quantity of a puriform substance, which, after a certain time, becomes concrete. This point of matter is generally found in the centre of a lobule, which is invariably in a state of inflammation. M. Andral lays it down as a general principle, that where different lobules are thus affected, the cellular tissue that surrounds and separates them from each other, forms enveloping membranes, and becomes to each lobule, what the pleura is to the whole lung. This enveloping membrane we take to be Dr. Baron's hydatid, which he has figured, so as to somewhat resemble the acephalocystus.

Tuberculous matter invariably presents itself to our view as a simple production of secretion, at first liquid; it is then modified by a kind of crystallisation, in proportion as its more fluid particles are absorbed; and let it be especially observed, that no one thing can be found in this substance, which could convey an idea of organisation. It offers to the anatomist, no one character that is known to constitute a tissue of any kind.

Dr. Baron rests considerable weight on a certain identity of form generally assumed by tubercles, and thinks that it strengthens his opinion, of their having previously existed as hydatids. But while delivering his opinions, as it were, *ex cathedrâ*, he might have been informed by almost any tyro, that this rounded form is necessarily that of all secreted fluids, when they are pressed equally on all sides; where the contrary is met with, it depends wholly on local circumstances, and particularly on the inequality of the surrounding pressure. Hence it is that abscesses assume, more or less, a spherical form.

Those things which Dr. Baron calls hydatids, like other encysted tumours, are accidental organised productions, forming part of the general vitality of the animal which contains them, but have no individual vitality like the vascular worms. The latter are so many distinct animals, each endowed with its own individual life, although living in the interior of other animals, which distinguishes them very clearly from such tumours as ought to bear the name of hydatids.

Here we should take leave of the Doctor and his hydatids, if we did not feel ourselves imperiously called on to advert to his practice, which is of a highly stimulating nature. Iodine, sulphate of quinine, &c., are marshalled before us in frightful array!! We would ask if such a plan of treatment be calculated to put down either general or local inflammation?

Dr. Baron not being very profound in his knowledge of first principles, is found to be much oftener employed in cutting knots than in untying them; and he is, therefore, governed throughout his different publications by the revolting idea of spontaneous generation, which should, at all times, be received with great caution, although the microscope may, in some instances, seem to favour its existence. Notwithstanding the wildness of the present attempt, and the disgusting dogmatism with which the author's opinions are delivered, he would not be altogether incapable of investigating this, or any other, subject, provided his mind could be cleared and purged of what Bacon calls the "idols of false philosophy." Dr. Baron has to learn, that the sciences can only be approached through the high road of nature; truth and simplicity must be our guides. Verulam tells us that the kingdom of man, which is founded in the sciences, cannot be entered otherwise than as the kingdom of God, that is, in the condition of a little child.

Notwithstanding the light which has been shed on this subject, principally by our continental brethren, its further investigation is highly desirable, but Dr. Baron does not seem to us a person calculated to raise the veil that still hangs over it.

A Compendium of the Diseases of the Human Eye, containing Descriptions and Explanations of the various Diseases; illustrated by Engravings, and accompanied by Practical Observations on their Treatment. By ALEXANDER WATSON, Fellow of the Royal College of Surgeons, Edinburgh, &c. &c. Second Edition, much enlarged. Maclachlan and Stewart, Edinburgh; and Baldwin and Cradock, London. 1828.

THE author of this treatise claims the attention of the reader, in his preface, by stating that the work is designed chiefly for the use of students; that the descriptions of the diseases (illustrated by coloured engravings) are concise; and last, though not least, that the whole is the result of actual observation. The book is divided into eleven chapters, of which the first is devoted to a consideration of the symptoms and treatment of inflammation of the globe of the eye. In the remainder, the diseases of the component parts are treated of individually, commencing with affections of the conjunctiva, and proceeding internally; and, lastly, a chapter is given on the formation of artificial pupil, and one also upon fungus hæmatodes.

From a work of this description we cannot, of course, expect much novelty, nor indeed minute information; it is sufficient praise, of such a book, to say, that the various diseases are enumerated in a succinct, and intelligible manner—diffuse enough for general purposes: thus much we are warranted in saying of the volume before us. At the same time, we must remark, that several important diseases are passed over without the slightest notice; as, for instance, in the fourth chapter, which professes to treat of diseases of the sclerotic coat, we do not find any allusion to the rheumatic and arthritic forms of disease, which attack this structure, and which are by no means of uncommon occurrence.* The diseases of the lachrymal appendages are likewise omitted by the author; it is scarcely necessary for us to remark, that they are of the utmost importance, diseases of the lids and of the lachrymal passages, forming, we believe, more than one-fourth of the ophthalmic affections met with, especially amongst the lower classes.

In perusing the book, we find the following passages, which we deem worthy of transcribing. Speaking of morbid growths from the tunica conjunctiva, the author says,—

"A chronic fungous state of the conjunctiva, having somewhat the characters of a cancerous affection, is occasionally met with in the eyes of elderly persons. There are at present before me three cases of this affection, in which it was thought proper to remove the whole of the eye-ball along with the diseased conjunctiva. Upon dissection, the coats and other parts seemed to be quite unaffected, and in their natural state."

At pages 86 and 87, where treating of staphyloma of the sclerotic coat, it is remarked:—

"Staphyloma of the sclerotic coat has commonly been conceived to take place in a slow and gradual manner, from thinning of the coat by an interstitial absorption of its substance. In those cases where I have seen it take place, it has come on in the progress of acute inflammation of the iris and choroid coat. When this has occurred, the projection, or dark-coloured tumour of the sclerotica, covered with enlarged red vessels, gave to the eye a most alarming appearance, by resembling cases of malignant fungoid disease of the eye, at the time the coats of the eye are about to give way.

"In one case, where staphyloma of the sclerotic coat occurred in the progress of acute ophthalmia, I was induced to make a small incision into the projecting parts, in order to relieve the sufferings of the patient, which were very great. By this incision, a quantity of yellow-coloured serous fluid was evacuated from between the sclerotic and choroid coats. The wound healed, the fluid re-accumulated, and was again

* For an excellent description of the characteristic symptoms of rheumatic ophthalmia, we may refer to Mr. Lawrence's Lecture, in No. 134 of the 9th volume of this Journal.

discharged. The choroid coat remained entire, so that none of the humours of the eye were evacuated. In this case, therefore, a separation had taken place between the sclerotic and choroid coats, by the interposition of inflammatory effusion at the part affected."

In respect to the use of mercury in acute iritis, the subjoined observation is made :—

"By the use of mercury I have seen many eyes saved, which otherwise, in all probability, would have been lost; and many lost, where this mineral was not used, that might possibly have been saved by this remedy arresting the progress of the disease; for, a remission of the disease generally takes place whenever the system becomes affected by the mercury."

The author has fallen into a strange error, in stating that the employment of belladonna, in cases of iritis, "was first recommended by the late Mr. Saunders." The utility of procuring artificial dilatation of the pupil, in various diseases of the eye, was known for centuries before the birth of Dr. Farre's "babe of grace."

There are some interesting remarks, at page 99, on the chronic form of inflammation of the iris, a disease which we have reason to believe is frequently overlooked, being remarkably slow and insidious in its progress, and existing for a long time with no very palpable signs. The true pathology of this affection consists in a chronic inflammation of the iris and membrane of the aqueous humour, and eventually it is manifested by the following appearances :—

"When the eye is examined, an irregularity of the pupil, and in some cases a contraction of it, may be observed; the iris loses its proper colour; the pupillar margin of the iris may be seen to adhere, at one or more points, to the capsule of the crystalline lens. By these adhesions, the pupillar margin of the iris is drawn backwards, particularly at the adherent parts; the motions of the pupil, at the same time, become impeded in proportion to the number and extent of the adhesions. Small masses of lymph may be seen to form the connecting medium between the iris and lens. The effusion of lymph may be confined to one or more points of the circumference of the pupil, which, in the progress of the affection, by extending, causes the complete adhesion of the pupil to the capsule of the lens. The capsule of the lens, in the progress of the disease, generally becomes opaque, from its either partaking of the inflammation, or acquiring a coating of effused lymph. This effused lymph, in many cases, fills up the pupillary aperture. The inner surface of the cornea, too, occasionally acquires a dimness and opacity from similar causes. In chronic inflammation of the iris, I have neither seen lymph effused in such quantity, nor so dense, as in cases of acute inflammation of the iris. Neither have I ever seen the lymph organised by red vessels. It has generally a flaky or downy appearance; in some cases, mixing with the aqueous humour, and rendering it opaque."

The author is disposed to regard the disease as an affection of the serous membrane lining the cavities, which contain the aqueous humour, rather than a disease of the iris itself, believing it to be closely analogous with the affections of serous membranes in other parts of the body. Mercury, here, as in acute iritis, is the remedy principally to be relied upon; it must be confessed, however, that its use is by no means equally satisfactory in the chronic as in the acute disease. But, as we before remarked, it sometimes happens that the disease is not detected until the most serious organic changes have occurred; and, again, cases are not unfrequently met with where the general health is so much impaired, that the use of mercury is forbidden,

In the chapter on the treatment of cataract, the author observes, in reference to the propriety of operating, if one eye only be affected, that.

"If the patient wishes it, there can be no objection, in ordinary circumstances, to the performance of an operation. In cases of cataract of both eyes, we might as well object to operate upon the other, after one eye has been cured, as refuse to operate when only one eye is affected."

And, to show the comparative success of the different operations, as well as the success attending operations for cataract generally, the following estimate, taken from Sabatier, is quoted.

"By extraction, Daviel is said to have operated on $7\frac{1}{12}$ cases successfully to 1 unsuccessfully; but this is doubted. Richter and Sharp $2\frac{1}{8}$ to 1. In 306 cases operated on by M. Roux, at la Charité, by *extraction*, the proportion of successful to the unsuccessful cases was $2\frac{1}{3}$ to 1. In 306 cases operated on by M. Dupuytren at l'Hôtel Dieu, chiefly by *depression*, the proportion of successful to unsuccessful cases was $5\frac{3}{10}$ to 1."

We cannot conclude this notice of Mr. Watson's Compendium, without expressing our approbation that the author has not fallen into the sin of introducing the various 'hard' words and 'cramped' terms, with which the department of ophthalmic surgery so plentifully abounds, and in which, by the way, the author of a "Synopsis," published in this country, seems literally to luxuriate; having more joy, apparently, over a sesquipedalian word than an alderman has over his turtle soup.

Of the numerous engravings attached to the volume, we must speak in terms of commendation. They afford very accurate representations of the diseases intended to be illustrated; in a word, they are "true to nature."

BROOKESIAN MUSEUM.

THE sale of this munificent collection is intended to begin on Monday, the fourteenth day of July, with a choice collection of models and casts of gravid uteri, amongst which there are some recorded cases of ruptured uteri, a multitude of fœtal monstrosities, an interesting collection of pathological subjects, and a beautiful series of wax and ivory models of the eye, and the diseases of that organ, the ear, tongue, and olfactory organ. A highly interesting series of fine casts of the human brain, made from Mr. Brookes's dissections, and accurately painted. Further, it is intended to alternate the sale of the anatomical and zoological subjects, so that Tuesday, the second day, will be devoted to the sale of the anatomical and pathological preparations of the horse, zebra, quagga, and ass. On Wednesday, anatomy, when a choice display of the anatomy and pathology of the ourapoëtic bladder, kidneys, &c., will form the subjects for sale; and the following day, zoology, &c.

IT is with sincere satisfaction that we announce the following additional subscriptions for the distressed Medical Gentleman and Family, whose severe misfortunes have been alluded to in former umbers. In reflecting on this case, the members of our profession would do well to bear in mind that the universe is composed of atoms.

	£.	s.	d.
Amount already advertised..	45	0	0
Anthony White, Esq.	1	1	0
Dr. Maton	1	1	0
John Wade, Esq.	1	1	0
Dr. C. J. Roberts	1	0	0
Dr. Armstrong	1	0	0
J. G. Guthrie, Esq.	1	0	0
Dr. John Sims	1	0	0
T. Bell, Esq. New Bedford-st.	1	1	0
Samuel Ashwell, Esq.	1	0	0
J. Amesbury, Esq.	1	0	0
George R. Skene, Esq.	1	1	0

CONSOLATION FOR THE BATS.

French Estimate of the Character of London Hospital Surgeons.

THE "Clinique des Hôpitaux," in one of its numbers for October last, has transcribed from THE LANCET the dialogue which took place between the *crustaceous* knight, Sir Anthony, and a little boy who was about to undergo the operation of lithotomy at the Westminster Hospital. The Parisian editor remarks:—

"Quel nom donner, en effet, à un oubli pareil des convenances? La *grossierité*, *l'ignorance*, la *cruauté*, ne sauraient etre portées plus loin."

The *coarseness*, *ignorance*, and *cruelty* of London hospital surgeons, have long been known to us, and we do most heartily rejoice to see that a due estimate is formed of their character abroad as well as at home.

GUY'S HOSPITAL.

SEVERE CONTUSION OF THE LEG, FOLLOWED BY SLOUGHING.—OPINION OF SIR A. COOPER ON THE FORMATION OF SKIN.

Henry West, a healthy man of middle stature, was admitted into Accident Ward, on the 26th of May, under the care of the *senior* surgeon.

The patient stated, that he was standing on the shafts of a loaded van, when it broke down, and the horses suddenly taking fright, the shafts became detached from the fore-part of the carriage. In endeavouring to stop the horses he fell down, and his right leg was jammed between the double shafts. He was drawn at a furious rate for about three hundred yards before he could be extricated, when he was immediately conveyed to the Hospital.

On examination, no fracture could be detected. There was a great deal of swelling of the leg and foot from extravasation of blood, and near the ancle a very severe contusion. Twelve leeches were applied to the contused part, with the subsequent use of an evaporating lotion. The limb was elevated upon a pillow, and a dose of house medicine was administered.

27. The leg and foot are much swollen, painful and hot; the extravasation about the ancle is more apparent. The contused part, in particular, has a livid cast. The patient is rather feverish. Continue the use of the evaporating lotion, and repeat the application of the leeches.

30. The inflammation and swelling have much subsided. The contused part has become quite dead. A red line of demarcation is observed surrounding the dead portion, and by which it is well defined. The patient was shown to Dr. Macartney, of Dublin, who chanced to go round, and he recommended lint to be dipped in warm water, and frequently applied. A practice which, the Doctor remarked, is now followed in the Dublin Hospitals with cases of a similar nature.

June 6. The man has gone on well to the present date. Dr. Macartney's plan was persevered in for a few days, but with no apparent benefit. It was therefore discontinued; and a solution of the chlorate of soda was directed, in the proportion of one drachm of the salt to a pint of water: a piece of lint to be dipped in the solution, and applied to the part; frequently removing it, and putting over it a linseed meal poultice.

13. The slough has become detached, and a small portion of the tibia is exposed. The wound is healing kindly. The granulations are healthy, and are fast approaching the surface. The patient is now quite well in health. A piece of simple dressing is applied to the part; the limb is strapped with adhesive plaster, and over this a bandage is adjusted.

23. On removing the dressings to day, several patches of new skin were seen formed upon the surface of the granulations, and quite distinct from the surrounding skin. The size of the wound is gradually diminishing, and the patient is doing well.

Remarks.—This case is adduced as an instance of the formation of skin, independent of the surrounding texture, a fact diametrically opposed to the opinion which has, for many years, been promulgated at the Borough schools by Sir Astley Cooper—that new skin is *never* formed where the original cutis has been completely destroyed; and that where new skin has been seen to form, as in ulcers which have taken on a healthy condition, it is because the original cutis had never been quite obliterated. In fact, to use his own language, "that the centre of the sore has not the power of forming new skin, but that the new skin in the centre is produced, in consequence of the original skin not having been destroyed." The reverse of this, however, is certain; and although denied by Sir A. Cooper, the late Mr. Hunter believed that it did take place.

In confirmation of this opinion, we may here mention the particulars of a case communicated some time since by a surgeon now practising in a large maritime town. New skin was, in this case, formed in the centre of the wound, where the original cutis had been destroyed to a great extent, in consequence of a severe contusion followed by sloughing.

Case.—The patient was a stout muscular healthy sailor, who, in crossing the road, was knocked down, and the wheel of a cart passed over the outside of the leg, near the middle. When the surgeon was called to the patient, which was not until after a lapse of some hours, the limb was much swollen, and there was considerable extravasation of blood. It was hot, and exceedingly painful and tender. On particular examination, the fibula was found to be fractured close to its articulation with the head of the tibia. The limb was placed upon the heel, and supported upon pillows. A large number of leeches were applied, with the subsequent use of cold lotions. On the next day, the patient had a high degree of fever, with a full hard pulse furred tongue, and considerable thirst. He was bled and purged, and a strict antiphlogistic regimen adhered to. This was continued for a few days, when the febrile symptoms abated, and the inflammation and

swelling of the limb very much subsided. The leg was eccymosed to a great extent; and a large surface of skin, covering the outside of the calf, became white and insensible, and around it was a complete zone of redness, indicating the separation of the dead parts from the living. At the expiration of a fortnight from this time, by the application of stimulating cataplasms, the slough became detached, exposing the subcutaneous fascia and cellular tissue. The discharge, at first thin and ill-conditioned, became (after the application of lint dipped in the nitric acid lotion, and linseed meal poultice) healthy, and of a good consistence. He was ordered to take the quinine in the infusion of roses twice a-day, with an occasional aperient at night. In a short time healthy granulations were formed, and soon rose upon a level with the surrounding skin. Cicatrization commenced, and the wound very much diminished in size. The granulations became exuberant, and astringent applications and gentle pressure were resorted to. At the end of four weeks from the detachment of the slough, several patches of newly-formed skin were discerned standing like little islands in the very centre of the sore, and others at little distances from them. In a few days these patches increasing, they became approximated to each other, and, by the seventh week, the wound had completely cicatrised, and the patient was quite well—Reporter.

ST. THOMAS'S HOSPITAL.

FATAL CASE OF DYSENTERY.

John Helder was admitted into Henry's Ward on June 17th, under care of Dr. Elliotson. He dated the commencement of his illness nine days back, at which time he was attacked by severe symptoms of dysentery. These continued unabated, and in a day or two afterwards he found himself labouring under all the marks of disease so visible at the time of admission. It would appear, that in the first instance he had recourse to a medical practitioner where he resided, which was a few miles from London, who, finding the disease *unmanageable*, had sent the poor fellow to St. Thomas's Hospital. When the patient arrived, he had intense pain over the whole abdomen, increased by pressure, especially over the region of the liver; great sickness, frequent evacuations, containing more or less blood and pus, and accompanied by straining and tormina; much thirst, and a rapid, weak, faultering pulse. He was not visited after admission, and took nothing to relieve him, but died in two hours from that time.

Post Mortem Examination.

The portions of peritoneum covering the abdominal cavity, the ileum, bladder, and large intestines, were entirely covered by lymph, in many places gluing the viscera to the parietes, and to each other. The gall-bladder was extremely large and full of bile, projecting at least three inches beyond the edge of the liver. When the liver was cut, an abscess was discovered, which discharged about a quart of offensive pus; it was situated principally in the right lobe, having its parietes so remarkably thick, that the liver possessed its natural firmness, and not the least fluctuating feel was perceptible, which circumstances rendered the existence of suppuration quite unexpected. The stomach was beautifully streaked internally by numerous congested veins, exhibiting, however, nothing else particular. The small intestines appeared not at all inflamed upon their inner surface, and but in the slightest possible degree externally. The large intestines were very extensively ulcerated from the valvula ilii to their termination, more especially in the cœcum and descending colon, in both of which divisions numerous large openings were distinguished; nearly a pint of pus was found free in the abdominal cavity. On removing the scull-cap, the arachnoid membrane was seen to be firmly and extensively adherent by means of lymph, to the pia mater; the brain was perhaps rather softer than natural, but otherwise displayed no uncommon appearance.

Remarks.—The above conditions, which are given as correctly as the illiberal, slovenly, and disgraceful method of conducting post-mortem examinations at this Hospital by *the demonstrators*, would permit of, when taken in conjunction with the very first symptoms complained of, would seem to imply that dysentery had been the primary disease, and that all those supervening were dependent upon, or actually the effects of, its continuance. The case, also, shows, how the large intestines may be inflamed, and even ulcerated in their whole extent, and yet the small intestines remain perfectly untouched, the valvula ilii acting, as it were, the part of a sentry, and preventing the progress of the enemy in that direction; and it likewise points out to what extent inflammation and ulceration may proceed in the system without causing death.

It is not known who was the medical attendant of this patient, but so far is certain, that although inflammation must for days have been raging violently, yet his arms bore not the smallest trace of a lancet puncture, nor his body the mark of a leech-bite or cupping glass!

PURPURA HÆMORRHAGICA CURED BY VENESECTION AND CALOMEL.

Hannah Cordy, aged 32 years, was admitted into Mary's Ward on the 20th of June, under the care of Dr. Elliotson. She dated the period of her illness from the commencement of the present menstrual discharge, which occurred after the usual interval, seven days ago, and had continued more or less up to this time: it had always disappeared previously in three or four days. Her attention had been particularly directed on the day previous to admission to several irregularly-shaped specks on the trunk and extremities, particularly the former: they were now very numerous; the skin presented a yellowish tinge; the eye was surrounded by a dark areola; there was great pain in the head; delirium at intervals; drowsiness; a short tickling cough; spitting of blood; frequent discharges of blood from the nose; the abdomen very tender on pressure. Two evacuations from the bowels daily, containing considerable quantity of blood; urine quite natural, and no pain in voiding it. The pulse 104 in a minute, rather soft and free; the tongue was coated with a yellowish white fur, except at the edges and tip, which were very red.

Venesection was ordered to-day, to the extent of twelve ounces; six grains of calomel directed to be given twice a-day, and half an ounce of castor oil in the morning, when required; warm ablutions three times a-day, and slop diet.

On the 21st, the petechiæ had almost entirely disappeared; there was no cough; had passed several stools to day; not the slightest discharge of blood from any part; the head much better; the abdomen softer, and free from pain: the pulse 80, and perfectly compressible, and the yellowness of the skin nearly gone.

The calomel was ordered to be continued, and house medicine daily, with the ablutions.

On the 23d, there was no appearance of petechiæ, and the patient was, in all respects, very much improved.

On the 26th, she continued to mend, and considered herself nearly as well as in common.

EFFICACY OF STRAMONIUM IN CASES OF ENTERODYNIA.

Dr. Elliotson has lately exhibited the extract of stramonium with much benefit, in cases which he denominates *simple enterodynia*—spasmodic pain of the bowels unconnected with inflammatory action, or the presence of irritating substances. This affection, Dr. Elliotson has frequently found co-existing with gastrodynia; and whilst the latter complaint has invariably yielded to the administration of the hydrocyanic acid, the pain in the bowels has continued unabated, in some cases, until the stramonium has been given. It is first prescribed in the dose of half a grain (for an adult) three times a-day, and it is gradually and cautiously increased, until the desired effect is produced—suspending its use, or diminishing the dose, if it occasion unpleasant symptoms about the head.

ST. BARTHOLOMEW'S HOSPITAL.

CASE IN WHICH A CLYSTER PIPE WAS FORCED THROUGH THE GUT, AND THE INJECTION THROWN INTO THE CAVITY OF THE ABDOMEN!!

A boy named Arthur Campbell, ætat. 12, was admitted into Colstin's Ward, under the care of Mr. Vincent, on Saturday evening last, 21st of June, at a quarter past seven o'clock, with a slight cut on the side of the head, and labouring under symptoms of concussion; it was stated, that he was throwing stones at some birds in the middle of the road, when a horse and cart ran against him and knocked him down; but whether the horse trod upon him, or the wheel of the cart went over him, it was not known, the carman having walked on some distance in advance of the cart: he was insensible when brought to the hospital. Three gains of calomel and 15 grains of pulv. jalap were ordered him immediately, and ℥iij. of brandy were written for; a tablespoonful or two of which the sister was ordered to give him every hour or two, according to its effect.

On the Sunday morning, 22d, he became sensible, and answered when spoken to, but the bowels had not acted; the calomel and jalap were repeated, which still not acting, an enema was ordered and administered by the sister about one o'clock mid-day. The boy continued sensible the remainder of the day, but apparently in great agony, and expired about a quarter past eleven the same night.

The body was examined this day, Monday, at one o'clock. Messrs. Vincent and Stanley were present at the examination, each marvelling much at the sudden and unexpected death of the boy. On the brain being removed from the skull, there was found to be a fracture of the base of the cranium, with some effusion of blood beneath the dura mater; Mr. Vincent, supposing that this was sufficient to account for the sudden death of the boy, now left the dead-house. Mr. Caswell, the house surgeon, then proceeded to examine the abdomen; on opening which, a considerable quantity of a light

brown fluid was observed floating in the cavity of the peritoneum, which exhibited here and there an inflamed surface, with patches of coagulable lymph. This caused some inquiry; it being presumed that the boy was in good health previous to the accident, which happened only on the Saturday night. Mr. Stanley supposed there might be some rupture of the viscera, and carefully endeavoured to find it out, for which purpose he traced the intestines to the rectum, and was just going to pronounce them entire throughout, when he discovered a hole in the anterior part of the rectum, opening into the cavity of the peritoneum; this caused some surprise, when Mr. Caswell immediately suggested the idea, that it had been occasioned by the pipe of the syringe, in the endeavours of the sister to give the injection, the sister having remarked to him that morning, that she had never had so much difficulty in getting an injection up before. This caused a more strict investigation, and, on examination of the fluid, globules of oil were found floating on its surface; the pipe of the syringe, which had been used, was then sent for, and Mr. Stanley found it to be of a size and form corresponding to the perforation of the rectum. There was now no doubt concerning the cause of this boy's sudden death; and it was the opinion of every one present, that his end was caused, or at least hastened, by the sister having, in her attempt to give the boy a clyster, thrust the pipe* of the syringe through the gut, and injected the contents into the cavity of the peritoneum. We are happy to say, that this sister has since been discharged for drunkenness, and misconduct of another nature.

We cannot conclude, without noticing the wish expressed by Mr. Stanley in the dead-house, that this circumstance should be hushed up, and kept as quiet as possible, a wish that corresponds with all Mr. Stanley's actions; also the question of Mr. Caswell, as to how it should be prevented getting into the periodical publications, as he termed them. Lord bless you, Messrs. Stanley and Caswell! there were no less than two or three in the dead-house, at that moment, at your worthy elbows, who are as much averse to the concealment of black work, as some gentry are given to the performance of it.

* The pipe of the syringe was of metal, and of a most unwarrantable length, namely, seven or eight inches, and, by some means or other, broken off from the syringe, whether in the use or not, we could not ascertain.

WESTMINSTER HOSPITAL.

TUMOUR OF THE LEFT EYELID.—ERYSIPELATOUS INFLAMMATION.

Ann Wood, ætat. 47, admitted 27th of May, under the care of Mr. Guthrie, in consequence of a tumour situated in the upper part of the left eyelid, and swelled ancles. States that she suffered much pain in her left temple about three months since, and, subsequently, pain all over her head; she applyed six leeches to each of her temples, and found great relief arising from the bleeding which they produced. As the pain left the head, the swelling of the eyelid increased to the present size, which is about as large as a nutmeg. She now complains of a constant darting pain in the tumour, but of no pain whatever in the head, since the tumour has been gathering; in consequence of the enlarged state of the upper eyelid, she cannot see out of the eye, but when the lid is raised, the sight is perfect. Complains that her ancles considerably increase in size, upon taking the least exercise; her general health seems to be in a pretty good condition. She was directed to apply two leeches to the tumour, also to take the following pill at night, and a cathartic draught in the morning.

Compound mercurial pill, five grains.

June 2. The pain in the tumour is not, at present, of a throbbing nature, but is a slight continued pain; the day after she had applied the leeches, she found great relief.

June 7. The tumour is not so much swollen as before; she now complains of a great deal of pain in the forehead; the face is considerably swollen, particularly on the left side, and likewise greatly inflamed; to day she has general fever existing; takes the pill and draught night and morning, as before directed; bowels freely open; pulse 85. No swelling, at present, in her ancles; the pupil of the left eye is rather contracted. Mr. Guthrie punctured the tumour with a lancet, and a small quantity of blood, mixed with pus, escaped. Ordered to take saline medicines, and apply a poultice over the eyelid.

9. Patient not so well to day; the swelling and inflammation mentioned on the 7th, have terminated in erysipelas; the face continues to be swollen, especially the right side, which was not so much inflamed as the other when we saw her last. Complains of great pain all over the head; the tumour, which was opened, is now healed, and has not discharged any pus; directed to apply a cold lotion to the face, formed of the acetate of ammonia and water; the fever has

considerably abated; she cannot sleep at night; bowels are not very open; to take immediately calomel six grains, extract of colocynth four grains, also one of the following draughts every four hours.

Liquor of tartarised antimony, six drops;
Solution of acetate of ammonia, half a drachm;
Distilled water, one ounce and a half.

10. We saw her this morning; she has passed a pretty good night, and is rather better upon the whole; the inflammation of the face is greatly abated; the tumour is considerably diminished in size since it was punctured, and she can now see very well. Pulse weak, and scarcely perceptible, likewise very irregular in its pulsations, which are about 75.

11. Says that she feels herself considerably better; the inflammation continues to abate gradually; the state of the pulse is the same as yesterday; she continues the draughts and lotion.

16. Since the last time we saw her, nothing particular has occurred; she has been rapidly improving in her health, and the tumour has nearly healed.

18. She is now nearly convalescent, and fit to leave the house; she was, therefore, discharged as an out-patient.

ST. GEORGE'S HOSPITAL,

FÆCAL FISTULA IN THE GROIN.

Grace Harris, ætat. 23; Talbot Ward. This patient was admitted on May the 14th, under the care of Mr. Brodie, on account of an abscess in the right groin, discharging purulent matter, mixed with fæces. The account she gave of her case was as follows:—Some time ago she received a kick in the affected part, which, though severe, did not occasion any immediate inconvenience; however, shortly after an abscess formed, which broke, and about three weeks previous to her admission, she observed that the fæces were mixed with the discharge. When she was received into the Hospital, the discharge appeared to consist of pus, mixed with fæces in a liquid state, and with mucus. The patient appeared rather low in health, but did not complain. Mr. Brodie introduced a probe to its full extent along the fistulous part of the abscess, and proposed laying it open, (which he did a few days afterwards.) He directed the following treatment:—Meat diet, porter, and half a pint of port wine daily; to avoid vegetables.

Sulphate of quinine, 2 grains;
Dilute sulphuric acid, 5 minims;
Tincture of opium, 3 drops;
Distilled water, 1 ounce; to be taken three times a day.

It is important to remark, that the fæces mixed with the discharge, were in a liquid state, which the patient said had been their usual character; however, it should be noticed, that at the time she had a slight diarrhœa. Mr. Brodie said, he knew of no reason why the patient should not do well.

The following day she complained of more pain than usual in the groin, which she attributed to the probing of yesterday. She appeared, however, much the same.

25. Since the abscess has been laid open, the patient has improved, and the quantity of fæces mixed with the discharge greatly diminished. An occasional saline purge has been exhibited, and she has had two grains of calomel, with eight of the compound extract of colocynth. The cretaceous aromatic mixture of the Hospital, when the diarrhœtic tendency of the bowels demanded it, has been given.

June 2. For the last few weeks she has been doing well, and at times little or no discharge of fæces was visible; but any trifling agitation of the mind will reproduce it instantly. She requested permission to take a little exercise in the open air, and Mr. Brodie consented to her being drawn out in the wheel chair; she is now taking saline effervescing medicine.

27. The appearance of fæces with the discharge has been continual through the last week; but the patient's health seems tolerably good, although there appears a little nervous excitement.

Mr. Brodie seems to think, that little more than mere local treatment is necessary, and as the quantity of fæces is daily diminishing, the patient looking well, we think we may take our leave of the case.

VARICOSE VEINS TREATED BY BLISTERING.

There is a female patient now in the Hospital, who has varicose veins in the back part of the thighs and legs, and we merely mention in reference to the plan of treatment adopted; she was ordered blisters on the parts, and much benefit experienced up to the present day (June 27); this plan has been followed up, and now the enlargement of the veins is materially diminished. Mr. Brodie remarked, that it was, however, purchasing relief at a dear price.

CASE OF PSOAS ABSCESS, IN WHICH PROFUSE HÆMORRHAGE SUCCEEDED THE OPENING OF THE TUMOUR.

Henry Brown, Oxford Ward, aged 30. This patient has an abscess on the upper and anterior part of the right thigh, in the direction of the psoas muscle. This abscess first made its appearance about two months previous to his admission; there was pain round the crista of the ilium, but none on the lumbar vertebræ, even on pressure. The patient's health was bad; he was thin and emaciated. Mr. Brodie, after directing the sulphate of quinine with acid, to be given for eight or nine days, opened the abscess, and about a pint and a half of matter of cheesy appearance escaped. There was no hæmorrhage at the time, but the next day a good deal of bleeding ensued, and it was evident that much blood was effused into the cavity of the abscess. Great constitutional disturbance ensued, the breathing became affected; pain over the abdomen on pressure; tongue white, and pulse very irregular. Mr. Brodie ordered a cupping glass to be applied over the opening of the abscess, and it was instantly filled with clots of coagulated blood, mixed with the discharge. The patient was much relieved, the constitutional symptoms diminished, and, in fact, he continued better in every respect for a day or two.

June 4. He is not so well; complains of pain in the back, groin, and abdomen; this appearance, however, is evidently caused by the constipation of the bowels. Haustus sennæ was ordered.

5. The draught had not operated yesterday, and the symptoms had increased. He had an enema in the evening, and a fomentation, but it has taken no effect on the bowels to the present moment. The man thinks, however, it has given much relief; he slept well afterwards; slight pain on left side of the chest; pulse 110 and full.

6. Better; the enema has operated; his pulse is lower, and the other symptoms are proportionally relieved; the abscess still discharges.

10. Much the same.

14. There certainly appears still some little improvement; the discharge, however, seems obstructed; he is taking

Sulphate of quinine, 3 grains;
Dilute sulphuric acid, 4 minims;
Tincture of opium, 12 drops;
Water, 1 ounce; three times a-day.

From this period the patient fluctuated considerably till within the last few days, when he was evidently sinking. On the 26th he died.

Inspectio Cadaveris.

The abscess has its origin from the second lumbar vertebra, which is much diseased. Mr. Brodie has promised to mention this case again, and his remarks we will give in our next. The viscera were all healthy; there was strong adhesion of the lungs, but evidently of old standing.

MERCURY USED AS A PREVENTIVE AGAINST THE PLAGUE.

M. Moreau de Jones has communicated the following information to the Royal Academy of Sciences, of Paris. An Ionian boat having had intercourse with a Turkish vessel, the master of the boat became affected with plague, and in this state arrived at Cephalonia, where he and the boat's crew were put into the Lazaretto. The English surgeon of the Lazaret, conceiving that the crew of the boat had received the contagion, put them all, to the number of twelve, on an active course of mercury, internal as well as external. The whole of the boat's crew were successively attacked with plague, but with a remarkable difference in the degree of intensity. The master, and one of the crew, who had not experienced any sensible effect from the mercury, died of the disease. The other ten became salivated, and had the disease in a mitigated form. They all recovered.

This remarkable event, says M. De Jones, naturally leads us to conclude that the escape of ten out of twelve was owing to the influence of the mercury; a conclusion strengthened by the fact that the two who died could not be brought under mercurial ptyalism. He observes that mercury was administered in the plague which desolated Malta in 1813; but it was given during the existence of the disease with the hope of *curing* it, and not as a *prophylactic*—which makes a great difference in the result. M. De Jones recommends mercurial frictions to be used in preference to the internal use of mercury, as a preventative, the former not being liable to objection on the score of irritating the stomach and bowels.

MONOPOLY OF THE IRISH COLLEGE OF SURGEONS.

To the Editor of The Lancet.

Sir,—In your Number of the 29th ult., you speak as if the surgical profession in Ireland, were in a state of comparative

freedom. Now how stands the case; more than three-fourths of the surgeons in Ireland are licentiates of London or Edinburgh; yet, by the act of parliament, no one can hold a county hospital in Ireland, unless he be a licentiate of the Dublin College. Let this obnoxious clause be *repealed*, and the monopoly of York Street is gone.

It is strange that the London College do not get an act repealed, which declares every member of it *incompetent* to fill this situation; and yet Dublin licentiates are eligible to county hospitals in England, where, even if they were not, it would be no such hardship, as they could demand an examination in London; but here apprenticeship effectually secures the monopoly.

If the College in London do not bestir themselves in this, for the sake of their degraded brethren in Ireland, in the name of God let them do so for their own, as double the number of persons would take their license.

I call on you, Sir, to turn the fire of your honest and independent journal on this unjust act of parliament. I call on the London and Edinburgh surgeons in Ireland, to petition the ensuing session of parliament against it; and I call on the students, interested in its repeal, to join them in that petition, and the monopoly must fall.

I am, Sir,
Your very obedient servant,
M. B. J. C. D.

Trinity College, Dublin, Jan. 8, 1828.

TAX ON APOTHECARIES' APPRENTICES.

To the Editor of THE LANCET.

SIR,—The energy you have displayed in protecting the profession from imposition, induces me to submit to you an evil, which is now most severely felt over the whole of this county. During the Goderich administration, the surgeons and apothecaries were universally overcharged for their apprentices, who have been most degradingly comprised under the head of male servants. After a thirteen years' peace, the infliction of a new tax so oppressive as this is hard to be borne; and as these young gentlemen are more pupils than servants, there is no end to the construction of the act, since dressers of hospitals are surely as much within the scope of its powers, as any other class of assisting students. What is still worse, the penalty is inflicted from the exceptions of the act, and not from the act itself, a principle contrary to the usual interpretations of the law. See No. 4, Schedule C; for, according to the assessors, unless the apprentice is bound for seven years, and without a premium, he must be paid for as a servant.

You will see that Mr. Sykes presented a petition on this subject last week, and that Mr. Dawson replied by saying, that the Government are arranging the words in a plainer manner, so as to be better comprehended. I do not find, however, that the tax is to be mitigated.

The absurd exception of premium and term is easily evaded, by filling up the indentures for seven years without expressing the premium, making services the consideration only. This is surely tending to injure the revenue still more, since then a stamp of lower price will suffice. I have said enough to demand your attention, and believe me,

I remain yours, &c.

△.

Yorkshire, June 9th, 1828.

The following is the clause in the Returns of the Assessed Taxes, which immediately affects the parties alluded to by our Correspondent. The tax is most grievous and oppressive:—

"A list of the greatest number of male persons employed in the following capacities, viz. clerk, or book-keeper, or office-keeper, distinguishing apprentices, bound for the term of seven years, where no premium has been given or contracted for."

BOOKS RECEIVED FOR REVIEW.

A View of the Elementary Principles of Education, founded on the Study of the Nature of Man. By G. Spurzheim, M.D. 8vo. 327. London, Treuttell and Wurtz.

On Difficult Cases of Parturition, and on the Use of Ergot of Rye. By W. Michell, Surgeon. 8vo. pp. 123. Underwood.

An Essay on the Animal, Mineral, and Vegetable Poisons; to which is added an Account of the Means to be employed in cases of Suspended Animation. Fifth edit. 12mo. pp. 86; Coloured Plates. Cox and Son.

Correspondents in our next.